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ABSTRACT

This publication presents a portrait of transitions from initial education to working life in the United States. Section I details the distribution of students at two basic levels: K-12 and tertiary education. It introduces a recurring concern--the distribution of students by ethnicity and socioeconomic status--and details the declining importance of vocational education in secondary schools. Section II focuses on tertiary educational attainment and the rise and impact of a highly competitive market for college and university education. Section III narrows the focus by presenting a series of matrixes detailing the rate at which young people transit from school to work and back again. It examines the diminished prospects of high school dropouts and how questions of ethnicity and gender further complicate the picture. Section IV sketches principal changes in the labor market over the last 2 decades and the shifting employment practices now changing the context for the transition from initial education to working life. Section V provides detail on the workings of the youth labor market and discusses briefly churning in the youth labor market. Section VI focuses on employers' assessment of young workers. Section VII describes the major initiatives--public and private--now in place to facilitate the transition from initial education to working life. Section VIII looks ahead to a time when the United States might have a less robust economy. (40 references) (YLB)

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NCPI Project Paper #1

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The National Center for Postsecondary Improvement's mission is to describe and analyze the challenges facing postsecondary education, with the ultimate goal of providing institutions, policymakers, employers, students, faculty and administrators the information and tools necessary to help them improve the U.S. postsecondary educational system. NCPI is funded by the U.S. Department of Education's Office of Educational Research and Improvement and represents an institutional collaboration among Stanford University, the University of Pennsylvania and the University of Michigan.

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The Transition from Initial Education to Working Life in the United States of America

A Report to the Organisation for Economic Co-operation and Development (OECD) as part of a Comparative Study of Transitions from Initial Education to Working Life in 14 Member Countries

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INTRODUCTION

One of the constants of our history is the role visitors have played in defining the American experience. The three most famous of those visits—along with the commentaries they produced—remain Gunar Myrdal's *An American Dilemma*, which recast American discussions of race in the 1940s, James Bryces' *The American Commonwealth*, which described the rawness as well as the power of American politics in the latter half of the nineteenth century, and the still most-read external commentary on the American experience, Alexis de Tocqueville's *Democracy in America*. Tocqueville's work reminds us of the importance of the lens one brings to the task of describing institutions and practices in the United States. What is required is a means of making sense of what otherwise can appear to be a jumble of experiences, overlapping jurisdictions, and stories that never seem to add up to a coherent whole.

For Tocqueville, the most important perspective was the central role participatory democracy played in the lives of so many ordinary Americans. We were, he observed, a people who took seriously the business of self-government, often coming to "look upon the social authority with an eye of mistrust and anxiety."[1] More than that, what struck Tocqueville was our sense of informality leading to a condition of impermanence, even instability, "that had penetrated into the habits of the people; it even appears to suit the general taste, and no one cares for what occurred before his time: no methodical system is pursued, no archives are formed, and no documents brought together when it would be very easy to do."[2]

Though much of what Tocqueville saw and documented in the 1830s has long since vanished, the underlying essence of his observations are as valid today as they were then: the United States is still characterized by social and political arrangements that are informal and decentralized. There remains an almost dizzying reliance on the ad hoc and experimental—on political and educational arrangements that depend on temporary networks and convenient alliances as much as formal authority, all coupled with an often maddening habit of dismissing the past as unimportant.

We were particularly reminded of Tocqueville's depiction of the American experience as we came to assemble this review of *The Transition from Initial Education to Working Life in the United States of America* as part of a study, sponsored by the Organisation for Economic Co-operation and Development (OECD), of this transition in 14 member countries. To Tocqueville's two perspectives we would add four specific vantage points for understanding how that transition works: what roles individuals, institutions, and governments play; and what range of outcomes result.

1. **The United States remains a nation of remarkably decentralized authority and infrastructure**. There is no system in the United States, no easily defined set of integrated jurisdictions. Our institutions are complex, not because they are convoluted, but because there are simply so many competing organizations and agencies often in pursuit of the same objective. What is described in the scope of this report is the general movement of students and of the shape of the networks that support their transition from initial education to working life.

What cannot be charted—indeed, what does not exist—is a neat system of boxes organized in a top-down fashion that directs students along well-defined pathways.

2. **Within the United States, the subject of education, in all of its manifestations, is at once vocational and academic.** Curricula frequently combine, confound, even confuse academic and vocational pursuits at both the secondary and tertiary levels. Programs are often purposeful blends, so that academic knowledge becomes applied in the workplace and workplace skills are harnessed to reinforce academic pursuits.

3. **The changing nature of the labor market has had, and will continue to have, a profound impact on the nature of the educational experience and the transition from initial education to working life.** In the United States, education and the economy are inextricably linked. Educational experiences are as much structured by the economy as by the educational institutions in which students enroll. Although many educators in the United States would wish this fact "wasn't so," it is simply not possible to talk about one without discussing the other.

4. **In keeping with these themes, there is rarely a clear transition from schooling to working in the United States.** Rather than following a linear movement from school to work, young people often combine both activities—pursuing one part-time and the other full-time, intermittently undertaking one activity or the other, or re-engaging either activity after a long hiatus. The United States is the land of second, third, fourth, and even fifth chances; if a student cannot arrive at a desired end point using one path, there is a multitude of approaches he or she can take to achieve personal goals, which also change over time.

These perspectives also make it difficult to explain how, when, or why young people transition from school to work in the United States. There is no clear beginning and even less of a well-defined ending. As with any bowl of noodles, however, we had to begin somewhere.

Section I **Educational Census** details the distribution of students at two basic levels: kindergarten through grade 12 (K-12), and tertiary education. In this first section, we introduce a concern to which we will return several times in this report—the distribution of students by ethnicity and socioeconomic status. This section also details the declining importance of vocational education in secondary schools.

Section II **Educational Attainment** continues the story, focusing principally on tertiary educational attainment and the rise and impact of a highly competitive market for college and university education. It describes the increasingly vocational nature of tertiary education in the United States; the structure of the tertiary market, including differential participation rates for different ethnic groups; and the fact that, while some students proceed directly through an educational pipeline leading to advanced degrees, Americans in growing numbers are swirling through their tertiary educations, often attending a variety of institutions and frequently taking up to ten years to earn collegiate degrees.

Section III — **Patterns of Work and Schooling** narrows the focus further by presenting a series of matrices detailing the rate at which young people in the United States transit from school to work and back again. The section concludes with an examination of the diminished prospects faced by young people who do not complete high school (high school dropouts) and how questions of ethnicity and gender further complicate the picture.

Section IV — **A Restructuring Labor Market** broadly sketches the principal changes in the U.S. labor market over the last two decades, as well as the shifting employment practices that are now changing the context for the transition from initial education to working life. The result is a prolonged period of instability for many young workers, as well as a growing likelihood that they will spend some time as contingent workers.

Section V — **Youth Employment** provides additional detail on the workings of the youth labor market—how youth unemployment rates have followed the same general course as overall unemployment rates, as well as which industries have gained and lost young workers. The section concludes with a brief discussion of churning in the youth labor market.

Section VI — **The Employer's Perspective** focuses on an important dimension of youth transitions: employers' assessment of young workers. What do employers seek when hiring young workers? How do they rate the work readiness of the graduates of high schools? Of community colleges and technical schools? Of four-year colleges and universities? When are employers likely to become involved with schools and colleges in meaningful partnerships? Does involvement with a school make for good business?

Section VII — **Public and Local Initiatives Since 1980** describes the major initiatives—both public and private—now in place to facilitate the transition from initial education to working life. Those readers who are familiar with the distribution of students in the United States, the nature of recent shifts in its economy, and the school and work transition patterns of its young people may want to skip ahead to this section.

Section VIII — **A Closing Observation** looks ahead to a time when the United States, perhaps enjoying a less robust economy, will again come to ask those questions underlying the Organisation for Economic Co-operation and Development's (OECD) interest in the transition from initial education to working life. What role can governmental agencies play in ordering this transition? How should that effort be funded? Its success measured? To what extent is the problem one of providing better opportunity to the economically disadvantaged? To what extent does the challenge involve most young people and most jobs?

ACKNOWLEDGMENTS

As so often before, our efforts have been guided and sharpened by Nevzer Stacey and her colleagues at the Office of Educational Research and Improvement (OERI) at the U.S. Department of Education, as well as the oversight committee convened for this project. Among the members of the committee, we owe a special debt to James E. Bottoms, Stephen Hamilton, J.D. Hoye, Hilary Pennington, Dan Ryan, Marsha Silverberg, and David Stern, who both sharpened our analysis and added to the accuracy of the report.

Special thanks go to Jacqueline Hendrick and Nichole Shumanis, research assistants at the Institute for Research on Higher Education, who developed much of the detailed data and compiled descriptions of initiatives included in this report.

Finally, this report would not have been possible without the more than two decades of sustained attention that the U.S. Department of Education has paid to the mustering and preserving of key data elements. The National Center for Education Statistics (NCES) is truly a treasure trove, and its *Digest of Educational Statistics* made our efforts successful.

--Robert Zemsky, Daniel Shapiro, Maria Iannozzi, Peter Cappelli, and Thomas Bailey

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Our portrait of transitions from initial education to working life in the United States begins with a description of the general distribution of students. While questions of transition inevitably focus on where students go, in the United States those answers are equally a product of where students come from—the range of their options and opportunities, their programs of study, and the extent to which their basic demographic characteristics (ethnicity, locale, socioeconomic status) become predictors of the educational pathways they are likely to choose.

Educational programs in the United States are generally clustered under four rubrics: compulsory primary education (kindergarten through the eighth grade); secondary education (ninth grade to twelfth grade, also called high school), which in most states is compulsory until age 16; postsecondary, or undergraduate, education, which includes two levels—associate's (two years) and bachelor's (four years); and postgraduate, or graduate, education, which confers master's or doctoral degrees. Postsecondary education is the usual designation for college- and university-level courses of study, this report adopts the more widely used term, *tertiary education*, to designate educational programs after grade 12. Tertiary education broadly defined for the purposes of this report includes all post-twelfth-grade vocational programs, certificate programs, non-degree programs, as well as formal degree programs leading to the associate's degree (two years) and bachelor's degree (four years).

Secondary schools, colleges, and universities are either publicly or privately controlled—that is, publicly or privately funded. They are governed either by state or local authorities (public) or by secular or religious boards (private). Students can transfer to and from an educational institution at any point in their schooling careers.

Because these categories represent a high level of classification, they may give the impression that education in the United States is formally and consistently organized. In reality, the whole of American education is a deceptively complex set of networks, with decision making devolved to the level of the institution or a local district: in some states, curricula are determined at the district level and in a few states at the state level; individual or district governing bodies (private or public) decide on a school's policies, standards, and structure; a school's resources (and, therefore, program offerings) vary according to the local tax base; and educational reform efforts tend not to be coordinated at the state or federal level. In 1995-96, there were almost 15,000 public agencies that provided elementary and secondary educational services to U.S. students.[1] Some of these agencies operated at the state or federal level, but a vast majority (14,367) were individual school districts at the local level with sovereignty over the administration of educational programs.

Distribution of K-12 Students

The best way to describe the shape of educational networks in the United States is to note the distribution of students across educational levels. In 1996, the total number of students enrolled in public or private primary and secondary education—which consists of pre-kindergarten, kindergarten, and the first through the twelfth grades—was over 51 million, or 19 percent of the total U.S. population.

Display 1.1 lists the number of students enrolled in primary and secondary education for both public and private schools in 1996. Almost eight times as many students were enrolled in public primary education as in private primary education, and almost 12 times as many students were enrolled in public secondary education as in private secondary education.

Display 1.1 Enrollment by Level of Education for K-12 Education: 1996 Estimated

Educational Level	Institutional Control	Enrollment
PreK - Eighth	Public	32,826,000
K - Eighth	Private	4,490,000
Ninth - Twelfth	Public	12,874,000
Ninth - Twelfth	Private	1,293,000

Source: U.S. Department of Education, National Center for Education Statistics (NCES), *Digest of Education Statistics 1997*, Table 3.

Educational specialization, or program of study, in secondary education is generally classified as general, college preparatory, or vocational. However, these categories do not represent well-defined course sequences leading to different kinds of diplomas or credentials, as the categories might imply. Definitions of vocational, college preparatory, and general programs vary widely from school to school, with perhaps the clearest demarcation between vocational and other programs. Yet, even the content, delivery, and location of vocational education in secondary schools shifts across jurisdictions: some students pursue vocational courses in the same building as their academic courses, while others attend these classes at different sites; some vocational and academic coursework is integrated, while in other programs these areas are never related.

For the purposes of this report, the curriculum categories are defined in the following ways. General education students, in effect, do not have a specialization; their curricula satisfy the basic educational requirements of an individual school or district. College preparatory (college prep) curricula focus on the preparation of secondary students for tertiary education; the nature of this specialization is often influenced by the kinds of courses the state's colleges and universities require for admission. Vocational education (voc-ed) curricula allow students to focus their schooling on a trade or occupation while satisfying basic educational requirements. The structure and content of vocational education programs vary widely, with some programs including a work component.

Display 1.2 lists the distribution of high school seniors in 1992 according to these programs of study and students' characteristics. Keep in mind that the program of study is self-reported by students: their own definitions of each category determined in which curricular program they placed themselves. The vast majority of U.S. high school seniors (88 percent) reported they were enrolled in either general or college preparatory high school programs. A larger percentage of students from the highest socioeconomic quartile and those in private schools were enrolled in college prep, compared to other students. Only 12 percent of all students engaged in vocational education at the secondary level, while a higher proportion of students from the lowest socioeconomic quartile and those in rural areas enrolled in vocational programs. One explanation for the higher rural enrollment in vocational programs derives from the special support vocational education legislation has provided in predominantly rural areas.

Display 1.2 Self-Reported Program of Study for High School Seniors in 1992

	Curriculum		
	College Prep	**General**	**Vocational**
All Seniors	43%	45%	12%
Males	42%	46%	12%
Females	44%	44%	12%
Ethnicity			
White	46%	43%	11%
African-American	36%	49%	15%
Hispanic	31%	56%	13%
Asian-American	51%	40%	9%
Native American	23%	61%	17%
Test Performance Quartile			
Lowest test quartile	15%	61%	23%
Second test quartile	30%	54%	16%
Third test quartile	50%	40%	10%
Highest test quartile	72%	25%	3%
Socioeconomic Status			
Lowest quartile	23%	56%	21%
Middle two quartiles	41%	46%	13%
Highest quartile	61%	36%	3%
Control of School			
Public	40%	47%	13%
Catholic	74%	24%	2%
Other private	66%	33%	1%
Location of School			
Urban	46%	43%	11%
Suburban	45%	46%	10%
Rural/Nonmetropolitan area	39%	46%	15%

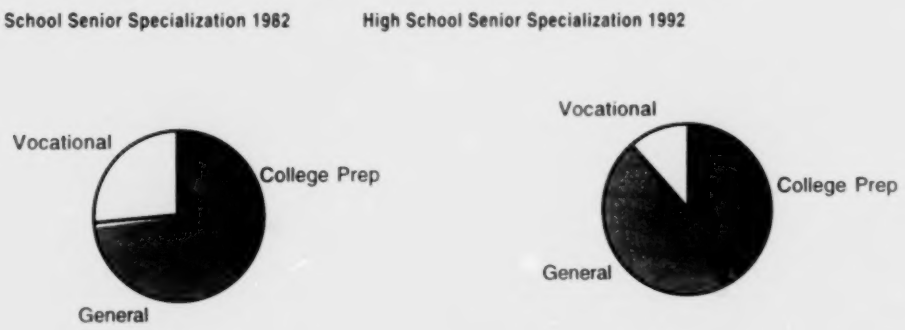
Source: U.S. Department of Education, NCES. *Digest of Education Statistics 1997*, Table 135.

A higher percentage of Hispanic (13 percent), African-American (15 percent), and Native American (19 percent) students were enrolled in vocational education than white students, while there is a ten percent gap between the percentage of African-American and white students who are enrolled in college prep, a 15 percent gap between Hispanic and white students, and a 23 percent gap between Native American and white students. On the other hand, a higher proportion of Asian-American students (51 percent) enroll in college prep than white students.

When student enrollment is compared by socioeconomic status, the clearest trend is the larger than expected enrollment in vocational education programs by high school seniors in the lowest socioeconomic category—21 percent versus 12 percent for all high school seniors. This percentage is almost twice that of students in the middle socioeconomic quartiles and seven times that of students in the highest quartile.

The more important story, however, is in the declining importance of vocational education in the United States. Between 1982 and 1992, there was a more than 50 percent decrease in demand for vocational education and a corresponding increase in demand for college prep and general program enrollment (Display 1.3). Historically, in most regions of the United States, the two dominant tracks in secondary education have been college prep and vocational education. The recent emergence of the general track as a primary choice for student enrollment is troubling to many educators in the United States, who believe that students are choosing this course of study because they or their parents worry about the social stigma that is often attached to vocational education. Unable or unwilling to enroll in the college prep track, these students may be qualifying themselves for neither work nor further education.

Display 1.3 Change in High School Senior Specialization: 1982 to 1992



Source: U.S. Department of Education, NCES, *Digest of Education Statistics 1997*, Table 135.

Display 1.4 reports these changes over time by student and school characteristics. Students in the lowest test score quartile, Hispanic students, and those from a low socioeconomic group have increasingly opted for—or have been directed toward—general education curricula. Similarly, students at urban and public schools reported more substantial shifts from vocational to general education than did students at other types of schools.

Display 1.4 Percentage Difference in Specialization from 1982 to 1992

	Percentage Point Change in Enrollment Share		
	College Prep	General	Vocational
All Seniors	5%	10%	-15%
Males	5%	8%	-13%
Females	5%	12%	-17%
Ethnicity			
White	5%	9%	-14%
African-American	2%	14%	-16%
Hispanic	6%	19%	-25%
Asian-American	-5%	13%	-8%
Native American	4%	6%	-9%
Test Performance Quartile			
Lowest test quartile	3%	19%	-22%
Second test quartile	9%	9%	-19%
Third test quartile	12%	2%	-14%
Highest test quartile	-1%	7%	-5%
Socioeconomic Status			
Lowest quartile	3%	15%	-18%
Middle two quartiles	5%	10%	-14%
Highest quartile	1%	9%	-10%
Control of School			
Public	6%	10%	-16%
Catholic	6%	3%	-9%
Other private	-2%	11%	-9%
Location of School			
Urban	8%	11%	-19%
Suburban	3%	12%	-15%
Rural/Nonmetropolitan area	6%	7%	-13%

Source: U.S. Department of Education, NCES, *Digest of Education Statistics 1997*, Table 135.

Distribution of Students After Expected High School Graduation

Today, most Americans—sooner or later—go to college. Among young people who graduated from high school in 1992 (in American parlance, the high school class of 1992), nearly two out of every three (62 percent) had enrolled in some form of tertiary education by 1994. At the same time, however, most of these young people were either working or looking for work two years after their expected graduation from high school (including those who dropped out prior to graduation). For 31 percent of these young people, work was their sole activity (Display 1.5). An additional 7 percent were either looking for work or laid-off. By 1994, less than half of the high school class of 1992 reported they were still attending a college or university—and of these, more than half reported they were both working and going to school.

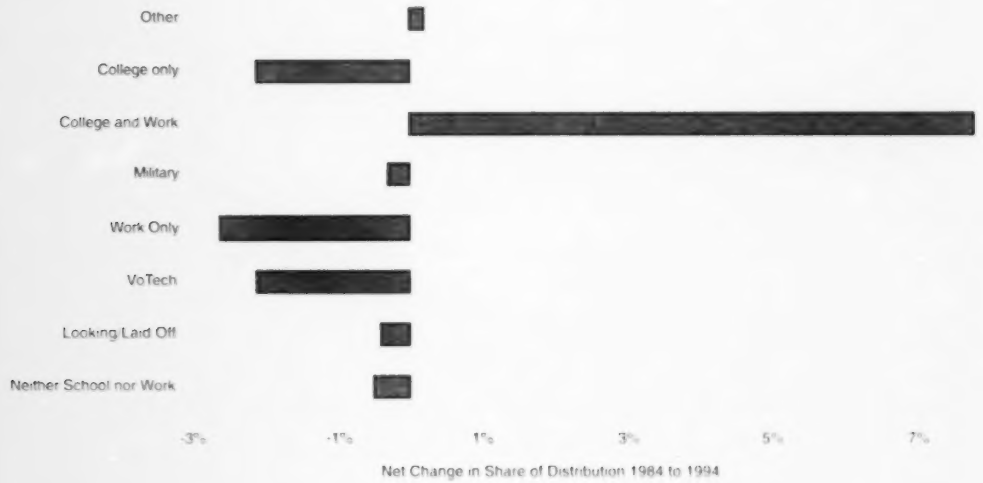
Display 1.5 1994 Status of the High School Class of 1992

Status	Percent of Total
Working Only	31%
Attending College and Working	24%
Attending College Only	18%
Looking for Work or Laid-off	7%
Neither Attending School nor Working	7%
Unclassified	6%
Attending a Vocational/Technical Institute	5%
Military	3%

Source: U.S. Department of Education, NCES, "National Educational Longitudinal Study of 1988" Third Follow-up Survey; special analysis by the Institute for Research on Higher Education.

When compared to the high school class of 1982, what distinguishes the high school class of 1992 is a substantial increase in the proportion of young people reporting that they were combining work and education—in particular, college and work. Between 1984 and 1994, the proportion of students engaging simultaneously in college and work increased by nearly 8 percentage points, while the proportion of those engaged in college, work, or vocational education as a sole activity declined slightly (Display 1.6).

Display 1.6 School and Work Status Two Years After High School: 1984 vs. 1994



Source: U.S. Department of Education, NCES, "High School and Beyond" Second Follow-up Survey and "National Educational Longitudinal Study of 1988" Third Follow-up Survey; special analysis by the Institute for Research on Higher Education.

In the United States, students are distributed widely among a variety of tertiary colleges and universities, but the vast majority (over 11 million) are in publicly controlled rather than in privately controlled institutions, which enroll 3.1 million students (Display 1.7). Two-year public colleges have the largest enrollment share (over 5 million students)—although many of these students are not enrolled full-time—followed by four-year public colleges (3.5 million).

Display 1.7 Enrollment in Tertiary Education: 1995 Estimated

Education Level	Institutional Control	Enrollment
Two-Year College	Public	5,278,000
Two-Year College	Private	215,000
Four-Year College	Public	3,579,000
Four-Year College	Private	2,191,000
Four-Year University	Public	2,236,000
Four-Year University	Private	764,000

Source: U.S. Department of Education, NCES, *Digest of Education Statistics 1997*, Table 173.

The Absence of a System

The paths that young people in the United States take in pursuit of their educations can be broadly characterized in two ways: as swirls or pipelines. The latter reflects the customary metaphor used to depict the progress of students through education to productive employment—a linear, full-time, and steady progression through subsequent levels of education to degree completion and then entry into the workforce. For some—and in many ways the nation's most advantaged—students, the notion of a pipeline still holds. These are the children of middle- or upper-income families with clearly defined aspirations and the means to invest in tertiary education. Following high school graduation, these students "go away to college," attend full-time, graduate in four or five years, and then proceed on to graduate or professional study. Many of these young people attend highly selective undergraduate institutions and then proceed to equally selective graduate and professional programs, particularly in law, medicine, and business (MBA).

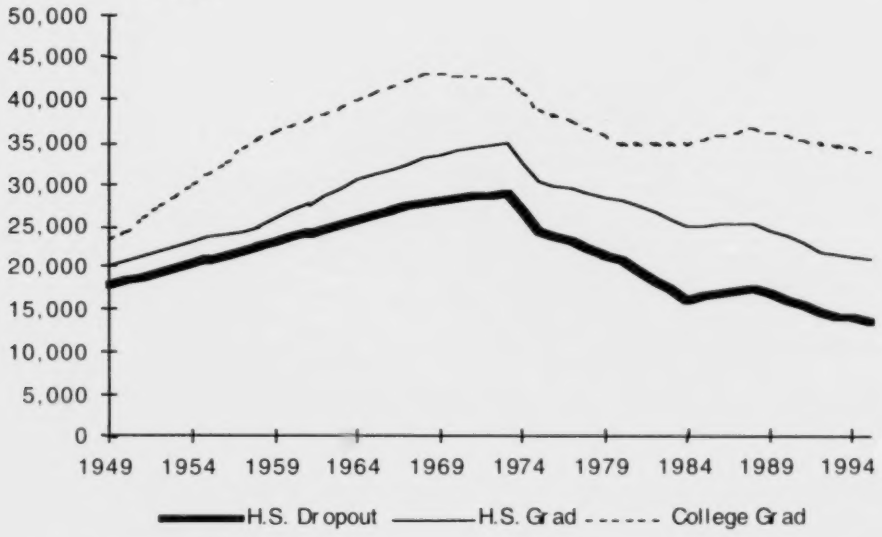
Other students, by choice or necessity, follow different patterns through their education careers, swirling in and out of a variety of educational institutions at different times in their lives. It is increasingly common for students to interrupt or combine schooling with work, proceeding intermittently from high school to part-time enrollment in a community college and through several phases of education and employment before completing a tertiary degree program. Essentially, "swirling" is a model describing a network with a variety of points of entry, transition, and passage, with each node or institution serving as both an entry and exit point that provides a steady supply of students to other nodes in the network.

The Making of the Market for Tertiary Education

For most of this century, the dominant education slogan in the United States has been "Stay in school—get ahead." And students did, as reflected in the rise in educational attainment rates in the United States from 1940 to 1996: the percentage of 25- to 34-year-olds with a high school diploma grew from 35 percent to 87 percent; the percentage with some college (tertiary) education more than quadrupled to 55 percent; and the percentage with a four-year college degree more than quadrupled from 6 percent in 1940 to 26 percent in 1996.[4]

In fact, most U.S. citizens now accept as an article of faith that going to college pays off by providing access to better jobs, better salaries, and brighter futures. While still true, it is a slogan that increasingly requires qualification, as reflected in the changes in average incomes (in constant dollars) of three groups of males aged 25 to 34 from 1949 to 1995 (Display 2.1).

Display 2.1 Earnings of Males Aged 25 to 34 in 1995 Dollars, by Level of Education: 1949 to 1995



Source: Samuel Stringfield, "Attempting to Enhance Students' Learning Through Innovative Programs," in *School Effectiveness and School Improvement* 6 (1995), p. 68.

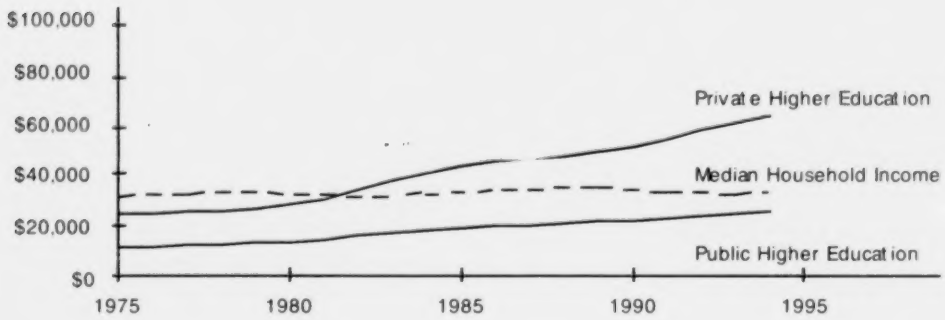
In 1994, college graduates were still more advantaged than their grandfathers, earning more than college graduates, high school graduates, and high school dropouts did in 1949. In general, however, after 1970 the average income in constant dollars of a male college graduate aged 24 to 35 began to decrease. What declined even more precipitously were the incomes of non-college graduates. In 1994, high school dropouts earned substantially less than, and high school graduates without college degrees earned roughly the same as, their grandfathers (assuming the same level of education) did a half-century earlier.

At the same time, the cost of attending a college or university moved in the opposite direction. In constant dollars, four years of tuition, room, board, and fees at both public and private institutions increased nearly threefold from 1975 to 1994. For public institutions, the average increase was from $11,032 to $25,785 in 1994 dollars; for private institutions the increase was from $24,514 to $64,410 in 1994 dollars.[3] What also increased, at least temporarily, was the availability of student aid—though, beginning in 1987, student aid increases failed to keep pace with the rising price of attending college. Between 1987 and 1993 (the years for which we have the best comparable data), low-income students experienced relatively sharper increases in their net tuitions (what a student pays after financial aid such as student loans and grants are deducted from overall costs) than higher income students. During that same period, irrespective of family income, net tuition increased substantially faster than the underlying rate of inflation.[4]

The relationship between the cost of and returns to a tertiary education becomes strikingly clear when mapping median household income against the four-year price of attending a public or private college or university. The result is a ratio that charts what workers earn against what they are being asked to pay for either their own or their children's tertiary education (Display 2.2). As recently as 1975, the median household income was nearly 30 percent more than the cost of four years

at a private institution and three times more than the cost of four years at a public institution. By 1994, the cost of attending a private institution for four years was twice the median income of a U.S. household. The ratio of median household income to the cost of attending a public institution had been reduced by more than a factor of two.

Display 2.2 Four-Year Cost of Attendance vs. Median Household Income in Constant Dollars: 1975 to 1994



Sources: U.S. Bureau of the Census, *Current Population Reports*, Series P-60, Income Statistics Branch/HHES Division, Table H-5; U.S. Department of Education, NCES, *Digest of Education Statistics 1997*, Table 312.

The Vocationalization of Higher Education

The fact that the price of a tertiary education has increased substantially while the average income of college graduates has remained relatively flat for nearly two decades has made the choice of a college or university that much more important. What most middle- and upper-income families now seek for themselves as well as their children are tertiary education opportunities that can provide a competitive premium in the labor market. As a result, the purpose of pursuing a college or university education in the United States is becoming decidedly more vocational. These trends are mutually reinforcing. There is greater insistence that colleges have a vocational cast and less willingness on the part of students to consider vocations that do not require a college education.

The pressures underlying these shifts are most evident at the programmatic level (Display 2.3). Students are increasingly choosing major courses of study that lead to vocational and professional degrees, as they seek to ensure their own economic success. Less important—more precisely, nearly disappearing—are those majors at the academic core, those pursued for learning's sake. In the United States today, only 1 percent of all four-year undergraduate students and a minimal percentage of all students combined pursue degrees in either philosophy or religion. On the other hand, 16 percent of all undergraduate students pursue degrees in business, and 12 percent major in fields leading to careers in health care.

Display 2.3 Percentage of Tertiary (Undergraduate) Students by Course of Study: 1995-96

Course of Study	Percentage of All Students	Percentage of Two-Year Undergraduates	Percentage of Four-Year Undergraduates	Percentage of Graduate and Professional Students
Undeclared	19%	26%	16%	3%
Business	16%	15%	16%	17%
Health	12%	15%	8%	10%
Education	8%	4%	8%	24%
Letters/Liberal Studies	7%	11%	5%	2%
Engineering	5%	5%	6%	5%
Social Sciences	4%	1%	6%	4%
Law	3%	4%	2%	6%
Visual and Performing Arts	3%	2%	5%	3%
Life Sciences	3%	1%	5%	2%
Computer Science	3%	3%	3%	2%
Psychology	3%	1%	5%	3%
Home Economics	3%	4%	1%	1%
Communications/Journalism	2%	1%	3%	1%
Public Administration/Social Work	1%	1%	1%	4%
Mechanics/Transportation	1%	2%	0%	0%
Industrial Arts	1%	2%	0%	0%
Agriculture	1%	1%	1%	1%
Other	1%	0%	2%	2%
Physical Science	1%	0%	1%	2%
Interdisciplinary Science	1%	0%	1%	1%
Mathematics	1%	0%	1%	1%
Philosophy and Religion	0%	0%	1%	2%
Medicine/Dentistry	0%	0%	0%	3%
Architecture/City Planning	0%	0%	1%	1%
Library Science	0%	0%	0%	1%
Area Studies	0%	0%	0%	0%
Foreign Language	0%	0%	1%	0%
Total	**100%**	**100%**	**100%**	**100%**

Source: U.S. Department of Education, NCES, *Digest of Education Statistics 1997*, Table 213.

This perceived need to focus on careers and vocational opportunities also underlies one of the more interesting innovations in community college programs: Tech-Prep. (See page 45 of Section VII for a description of these federally funded programs.) Conceived as a way of linking beginning tertiary education and actual work experience, Tech-Prep programs seek to increase the academic pursuits of students likely to attend a community college by explicitly making working a component of learning. By 1995, Tech-Prep programs were being administered by 1,029 consortia in every state of the nation—enrolling more than 737,000 secondary students.

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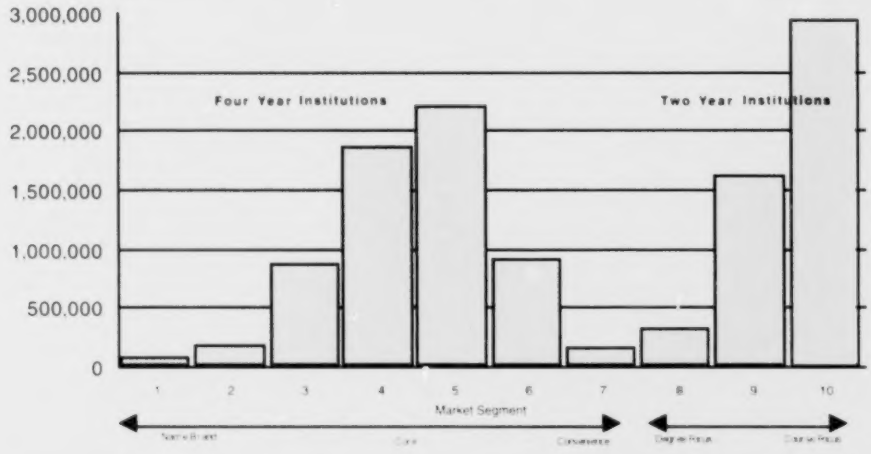
These four conditions and forces—the decentralized nature of education in the United States, the range and flexibility of paths that students follow through school and work, the increasing importance of attaining a tertiary degree as necessary but not sufficient for ensuring economic security, and the ensuing vocationalization of tertiary education—have, in turn, created a market in which college and university educations are seen as commodities intrinsically linked to economic goals. It is also an increasingly segmented market in which the demand for enrollment in particular programs and institutions largely determines the revenues available to those programs and institutions.

One part of the market primarily serves those in the pipeline: traditional-aged students matriculating at largely residential campuses, seeking the kind of professional credentials that historically have guaranteed middle- or upper-income lifestyles and economic security. These are the United States' *name brand* institutions—well-known, prestigious, self-important, high-priced. Another part of the market serves students who are part of the swirl, enrolling in user-friendly institutions that stress *convenience* and value for students of a variety of ages who increasingly mix work and learning while pursuing their degrees one or two courses at a time (Display 2.4).[8]

The structure of the market for tertiary education in general and baccalaureate education in particular is important, because the segment in which a student shops and enrolls often predicts his or her subsequent educational attainment. Ten years after high school, only 43 percent of the students who started at an institution in the *convenience* segment of the market had completed a bachelor's degree. In sharp contrast, more than 90 percent of the students starting at an institution along the most selective edge of the *name brand* part of the market had completed a bachelor's degree, and nearly 60 percent had already engaged in postbaccalaureate study.

Display 2.4 Distribution of Students by Market Segment and Tertiary Institution: 1994-95



Source: Barron's Educational Series, Inc., *Barrons Profiles of American Colleges* (1996); College Entrance Examination Board (1995); Electronic Data Files for *The College Handbook*, 1994-95 Academic Year; NCES, Integrated Postsecondary Education Data System (IPEDS), data for 1994-95, 1993-94, 1992-93; Electronic Data Files for *Peterson's Guide to Four-Year Colleges*, 1994-95 Academic Year; special analysis by the Institute for Research on Higher Education.

Most of the key characteristics that matter to higher education—price, cost, the nature of educational program—sort either left-to-right or right-to-left across the seven market segments for four-year institutions and three market segments for two-year institutions. For example, among four-year institutions, those in the *name brand* segment of the market are the most expensive, reflecting a higher demand for the educational experience they offer; price declines proportionally moving from left to right across the segments (Display 2.5).

Display 2.5 Distribution of Students, Student Characteristics, Average Tuition, and Revenue per FTE* Student by Institutional Control and Market Segment: 1994-95

	Private			
		Four-Year Institutions		Two-Year Institutions
	Name Brand (1, 2, 3)	Core Market (4, 5)	Convenience (6, 7)	Community College (8, 9,10)
Percent of Total Enrollment	6%	10%	2%	1%
Percent of African-American Students	4%	11%	3%	2%
Percent of Hispanic Students	5%	10%	1%	2%
Percent of Asian-American Students	8%	5%	1%	1%
Percent of White Students	6%	10%	2%	1%
Percent of Full-Time Undergraduates	8%	12%	1%	1%
Percent of Part-Time Undergraduates	1%	5%	2%	1%
Average Tuition	$15,616	$10,142	$9,502	$6,416
Revenue per FTE* Student	$14,583	$8,453	$8,105	$7,227

	Public			
		Four-Year Institutions		Two-Year Institutions
	Name Brand (1, 2, 3)	Core Market (4, 5)	Convenience (6, 7)	Community College (8, 9,10)
Percent of Total Enrollment	4%	27%	7%	43%
Percent of African-American Students	3%	26%	8%	44%
Percent of Hispanic Students	4%	19%	7%	52%
Percent of Asian-American Students	9%	25%	7%	46%
Percent of White Students	4%	28%	7%	42%
Percent of Full-Time Undergraduates	6%	35%	7%	29%
Percent of Part-Time Undergraduates	1%	11%	6%	73%
Average Tuition (In State)	$3,717	$2,549	$2,470	$1,542
Average Tuition (Out of State)	$9,681	$6,776	$6,337	N/A
Revenue per FTE* Student	$11,808	$8,585	$8,153	$4,802

Sources: Barron's Educational Series, Inc., *Barron's Profiles of American Colleges* (1996); College Entrance Examination Board (1995); Electronic Data Files for *The College Handbook*, 1994-95 Academic Year; NCES, IPEDS, data for 1994-95, 1993-94, 1992-93; Electronic Data Files for *Peterson's Guide to Four-Year Colleges*, 1994-95 Academic Year; special analysis by the Institute for Research on Higher Education.

*Full-Time Equivalent

In the United States, the market for tertiary education is organized both vertically (in terms of years of schooling) and horizontally (according to the segment in which students pursue tertiary education). Considerations such as price, patterns of course offerings, and the application of courses of study to the labor market or to further education heavily influence the choices students make about their paths through tertiary education.

Two key student characteristics map to the continuum that underlies the structure of the market. The first is age. High-status *name brand* institutions are almost exclusively the preserve of the young—those students who are in the pipeline and are enrolling in tertiary education immediately following graduation from secondary schools. Those institutions in the *convenience* sector of the market, however, are increasingly characterized by older students—those in the swirl who are returning to school after engaging in the labor market in order to complete a degree or receive skills training. One out of every four undergraduates in the institutions that comprise the *convenience* market is more than 30 years old.

The data detailing the distribution of undergraduates by ethnicity across the market segments are also ordered. Hispanic students are over-represented in two-year public institutions and under-represented in four-year core institutions. This may reflect the relatively lower cost and greater accessibility of institutions that fall toward the *convenience* edge of the market. (Many of these institutions have adopted open-enrollment policies: all students are admitted, regardless of prior educational performance.) Asian-American students, on the other hand, are over-represented in private and public four-year *name brand* colleges and universities, following the classic pattern of an immigrant group seeking social and economic mobility through education.

The development of a segmented market for non-profit college and university education has helped make possible a dramatic expansion of the for-profit market for tertiary education. The emergence of for-profit providers is relatively new; however, their numbers are growing rapidly. No systematic accounting has been undertaken, but a recent survey of for-profit provider sites on the World Wide Web indicates two general categories of for-profit institutions:[7]

1. Fully for-profit proprietary educational institutions that provide a range of credentialing services from certificates to associate's and bachelor's degrees; examples of this category include the University of Phoenix, the DeVry Institute of Technology, and ITT Educational Services.

2. Distance education courses provided by traditional institutions, as well as for-profit providers. The development of the market for distance education has also led to new organizational structures capable of providing access to both for-profit and non-profit providers. The most interesting of these new educational brokers is the Western Governor's University, founded by the governors of 17 western states and their 14 business partners.

One of the ironies suggested by the emergence of well-organized, highly capitalized for-profit providers is that their businesses could represent a move toward standardization on a national scale. For-profit providers such as DeVry and the University of Phoenix are essentially franchise operations that offer relatively uniform products at numerous sites across the United States. Traditional non-profit institutions, on the other hand, offer educations that are often unique

to a local setting. At the moment, at least, it is the for-profit sector that holds the greatest promise of a truly national system of tertiary education, characterized by standardized products and ease of enrollment.

Whether or not a tertiary institution is for-profit or non-profit seems to matter not at all to most students shopping for convenient, user-friendly educational programs and courses. They treat for-profit degrees and credentials as equivalent to—and sometimes, for particular fields, more relevant than—degrees and certificates from traditional institutions. This transparency of provider is reinforced by the fact that most employers similarly recognize for-profit certification as a valid prerequisite for employment. That these certificates are market-sensitive, delivered in flexible ways, and standardized across the United States only enhances their value.

Mapping Transitions

The nature of educational pathways in the United States—whether products of pipelines, swirls, or simply life experiences—is best reflected in the collective history of the high school class of 1982. In 1980, when these young people were sophomores in high school, the National Center for Education Statistics (NCES) drew a broadly representative sample and then surveyed respondents periodically over the next decade—that is, through 1992, which was ten years after their expected graduation from high school. In 1988, NCES began a similar longitudinal tracking process with students who were expected to graduate from high school in 1992. For this cohort, information is available on what they were doing two years after their expected graduation.

These two key data sets allow us to construct a detailed mapping of their transitions from initial schooling to working life. For the high school class of 1982, the data document if and when they went to college or pursued other forms of tertiary education, how and when they combined work and additional education, the kinds of jobs they had, and the salaries they earned. For the high school class of 1992 the data contain information on whether or not they enrolled in college, their early experiences in the labor market, and their early persistence toward tertiary education degrees.

To summarize the experiences of these young people, we present below a series of transition matrices that report the percentage of each cohort moving from one activity to another over a given period of time. The matrices should be read left-to-right along the rows; they indicate, as a percentage, what respondents who reported doing particular activities in one year (the row label) were doing in a later year (the column heading). Definitions for the status categories used in the transition matrices are the following:

- **Neither School Nor Work**: Respondent was neither enrolled in school nor working.
- **Laid-off/Looking for Work**: Respondent was not in school or working, and had been laid-off or was actively looking for work.
- **Work Only**: Respondent was working as a sole activity.
- **Military**: Respondent was in the military as a sole activity.
- **Vo-Tech**: Respondent was enrolled in vocational/technical school as a sole activity.
- **High School and Work**: Respondent was still taking high school courses and working.
- **High School and Laid-off/Looking for Work**: Respondent was still taking high school courses and had been laid-off or was actively looking for employment.

- **High School Only**: Respondent was still taking high school courses as a sole activity.
- **College and Work**: Respondent was enrolled in college courses and working.
- **College and Looking for Work/Laid-off**: Respondent was enrolled in college courses and had been laid-off or was actively looking for work.
- **College Only**: Respondent was enrolled in college courses as a sole activity.
- **All Other**: Activity falls outside of the above categories.

Two purposes underlie the presentation of the matrices. Because of their level of detail, the matrices serve as statistical compendiums documenting the actual rates at which young people transit from one status to another. They come as close as we can to providing flow-charts that depict how young people move back and forth from school to work, and from school and work to work and school. At the same time, the complexity of the matrices illustrate just how varied transitions from initial education to working lives have become in the United States.

Work and Educational Attainment: The High School Class of 1982

The first display is a summary table showing the self-reported status of the high school class of 1982 at four points in time: during their senior year in high school (if still enrolled); two years later in 1984; another two years later in 1986; and finally in 1992, ten years after expected graduation. What Display 3.1 reflects is the expected flow towards work, so that ten years after high school 80 percent of the respondents were working, and another 3 percent were actively looking for work. It is also worth noting the persistence with which high school dropouts in this group were still actively pursuing a high school credential. Finally, note how often members of the high school class of 1982 combined working and schooling. From age 16 onward, joint labor force participation and enrollment become increasingly the norm for those still enrolled in educational programs. Among the class of 1982, 54 percent were already working while still in high school; while in college, nearly as many students combined working and learning as simply attended a college or university; and even ten years after graduation from high school, 13 percent of the cohort was still engaged in both activities.

Display 3.1 Overview of Transitions of the High School and Beyond Sophomore Cohort: 1982 to 1992

Status	1982	1984	1986	1992
Neither School nor Work	3%	8%	9%	11%
Looking for Work	3%	7%	5%	2%
Working Only	5%	35%	45%	65%
In the Military	0%	4%	4%	1%
Vocational/Technical Training	1%	9%	6%	2%
In High School and Working	54%	1%	1%	7%
In High School and Looking for Work	12%	1%	0%	1%
In High School Only	21%	0%	0%	2%
In College and Working	0%	14%	14%	6%
In College and Looking for Work	0%	2%	1%	0%
In College Only	0%	18%	12%	2%
All Others	0%	2%	2%	1%
Total	100%	100%	100%	100%

Sources: U.S. Department of Education, NCES, "High School and Beyond" First, Second, Third, and Fourth Follow-up Surveys; special analysis by the Institute for Research on Higher Education.

The first transition matrix, Display 3.2, details what the high school class of 1982 was doing two years after expected graduation. Start with the first row, *Neither School nor Work*, a category comprising just 3 percent of the group of students who were high school sophomores in 1980 and expected to graduate high school in 1982. Two years later, 38 percent of this group of young people were still not working and not in school, 27 percent were working, and 11 percent were back i high school (4 percent + 3 percent + 4 percent).

More interesting is the fourth row, *High School and Work*, comprising 54 percent of the high school class of 1982. Two years later, 17 percent of this group were i college and working, extending the pattern from their high school years. Another 17 percent were attending college but not working, 10 percent were enrolled i vocational education programs, 4 percent were in the military, and 38 percent listed working as their only activity. Compare these transitions to the 21 percent of the high school class of 1982 who spent their senior year in high school but *not* in the workplace (sixth row): 29 percent were attending college and not working, just 11 percent were attending college and working, 27 percent were working, 8 percent were in vocational education programs, and 4 percent were in the military. This latter group contained most of the graduates who might be said to be in the education pipeline, though their experiences were not substantially different than those who combined working and schooling while still in high school.

Display 3.2 Transitions in Work/Schooling Status from 1982 to 1984

Read across the rows to determine what percentage of respondents in a 1982 school and work category were in a particular category in 1984.

Status in 1982 ↓ / Status in 1984 →	Neither School nor Work	Looking for Work Laid-off	Work Only	High School and Work	High School and Looking	High School Only	Military	Vo-Tech	College and Work	College and Looking	College Only	All Others	Percent of Total Respondents in 1982
Neither School nor Work	38%	18%	27%	4%	3%	4%	3%	2%	1%	0%	1%	1%	3%
Looking for Work Laid-off	22%	18%	36%	5%	4%	3%	0%	0%	1%	0%	0%	3%	3%
Work Only	12%	11%	57%	6%	2%	1%	2%	3%	1%	0%	1%	4%	5%
High School and Work	5%	5%	38%	0%	0%	0%	4%	10%	17%	1%	17%	2%	54%
High School and Looking	6%	10%	31%	1%	1%	0%	4%	11%	15%	3%	16%	3%	12%
High School Only	7%	8%	27%	0%	0%	1%	4%	8%	11%	3%	29%	1%	21%
Military	1%	10%	35%	0%	6%	0%	31%	8%	0%	0%	5%	5%	0%
Vo-Tech	18%	16%	43%	2%	6%	1%	4%	9%	1%	0%	0%	2%	1%
All Others	23%	21%	31%	4%	1%	2%	0%	7%	8%	0%	2%	2%	1%
	8%	7%	35%	1%	1%	0%	4%	9%	14%	2%	18%	2%	100%
	Percent of Total Respondents in 1984												

Sources: U.S. Department of Education, NCES, "High School and Beyond" First and Second Follow-up Surveys; special analysis by the Institute for Research on Higher Education.

The transitions from 1984 to 1986 are mapped in Display 3.3. In 1984, 35 percent of the high school class of 1982 reported that work was their sole activity. In 1986, this category (third row) accounted for 45 percent of the total cohort, largely because many of those who reported attending college in 1984 (while both working and not working) now reported that work was their sole activity. Again, more than one-third of those who were neither working nor in school in 1984 (first row) were now reporting that working was their sole activity, while 7 percent reported they were attending college. Fifty-five percent of students in Vo-Tech in 1984 (fifth row) had completed their programs and moved into the workforce by 1986, while only 16 percent had moved on to college. In fact, most of this group was making steady progress towards either full- or part-time work: 15 percent of the students who reported that college was their sole activity in 1984 (eleventh row) now reported working as their sole activity, and 24 percent of these students reported now combining college and work.

Display 3.3 Transitions in Work/Schooling Status from 1984 to 1986

Read across the rows to determine what percentage of respondents in a 1984 school and work category were in a particular category in 1986.

Status in 1984 ↓ / Status in 1986 →	Neither School nor Work	Looking for Work Laid-off	Work Only	High School and Work	High School and Looking	High School Only	Military	Vo-Tech	College and Work	College and Looking	College Only	All Others	Percent of Total Respondents in 1984
Neither School nor Work	37%	9%	34%	1%	1%	2%	2%	5%	3%	0%	4%	2%	8%
Looking for Work Laid-off	16%	18%	45%	1%	1%	1%	1%	6%	2%	0%	2%	6%	7%
Work Only	9%	4%	70%	2%	1%	0%	2%	4%	5%	0%	1%	2%	35%
High School and Work	6%	8%	54%	14%	2%	6%	0%	6%	0%	0%	0%	5%	1%
High School and Looking	18%	14%	37%	10%	7%	3%	3%	2%	5%	0%	0%	1%	1%
High School Only	46%	16%	9%	6%	1%	12%	0%	8%	0%	0%	0%	1%	0%
Military	4%	7%	18%	0%	0%	0%	64%	2%	3%	0%	2%	0%	4%
Vo-Tech	5%	4%	55%	0%	0%	0%	2%	13%	9%	1%	7%	3%	9%
College and Work	2%	1%	27%	0%	0%	0%	2%	5%	41%	2%	16%	3%	14%
College and Looking	3%	4%	21%	0%	0%	0%	2%	8%	36%	7%	15%	4%	2%
College Only	4%	2%	15%	0%	0%	0%	1%	5%	24%	4%	44%	2%	18%
All Others	9%	10%	54%	1%	0%	0%	3%	6%	6%	0%	2%	8%	2%
	9%	5%	45%	1%	0%	0%	4%	6%	14%	1%	12%	2%	100%
	Percent of Total Respondents in 1986												

Sources: U.S. Department of Education, NCES, "High School and Beyond" Second and Third Follow-up Surveys; special analysis by the Institute for Research on Higher Education.

In 1992, ten years after expected high school graduation, most of the cohort was working, though a fair proportion (14 percent) also reported combining school and work (Display 3.4). Seventy-five percent of the cohort that was engaged in college and work, and 69 percent of those who reported they were in college and looking for work in 1986 were working as a sole activity in 1992. Look down the third column, *Work Only*, and note that, on average, 65 percent of any given row reported transiting to work only. Not fully captured in these matrices is the persistent problem of high school dropouts, a topic we will cover after a brief examination of the transitions of the high school class of 1992.

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Display 3.4 Transitions in Work/Schooling Status from 1986 to 1992

Read across the rows to determine what percentage of respondents in a 1986 school and work category were in a particular category in 1992.

Status in 1986 ↓ / Status in 1992 →	Neither School nor Work	Looking for Work Laid-off	Work Only	High School and Work	High School and Looking	High School Only	Military	Vo-Tech	College and Work	College and Looking	College Only	All Others	Percent of Total Respondents in 1986
Neither School nor Work	25%	4%	40%	10%	1%	11%	0%	2%	3%	0%	3%	0%	9%
Looking for Work Laid-off	15%	3%	53%	12%	5%	6%	0%	2%	3%	0%	1%	1%	5%
Work Only	11%	2%	69%	8%	1%	1%	0%	2%	5%	0%	1%	0%	45%
High School and Work	0%	0%	0%	79%	4%	10%	0%	0%	0%	0%	4%	2%	1%
High School and Looking	0%	0%	7%	58%	14%	16%	0%	3%	0%	0%	3%	0%	0%
High School Only	0%	0%	0%	40%	2%	28%	0%	15%	2%	0%	12%	0%	0%
Military	5%	2%	65%	3%	1%	0%	8%	2%	9%	0%	3%	2%	4%
Vo-Tech	11%	2%	68%	5%	0%	1%	0%	2%	8%	0%	2%	1%	6%
College and Work	8%	1%	75%	0%	0%	0%	0%	1%	10%	0%	2%	1%	14%
College and Looking	5%	3%	69%	0%	0%	0%	0%	2%	12%	3%	6%	0%	1%
College Only	8%	1%	73%	0%	0%	0%	1%	1%	10%	0%	5%	1%	12%
All Others	8%	6%	63%	12%	0%	0%	0%	1%	8%	0%	1%	2%	2%
	11%	2%	65%	7%	1%	2%	1%	2%	6%	0%	2%	1%	100%
	Percent of Total Respondents in 1992												

Sources: U.S. Department of Education, NCES, "High School and Beyond" Third and Fourth Follow-up Surveys; special analysis by the Institute for Research on Higher Education.

Work and Educational Attainment: High School Class of 1992

The same transitions are mapped in Display 3.5 for the high school class of 1992, which the National Center for Education Statistics has tracked as a representative sample since 1988, when the cohort was in eighth grade. The most important difference between the two classes was a 10 percentage point jump in the proportion of class of 1992 students who were in college and working: 32 percent of those engaged in high school and work in 1992 (fifth row) were enrolled in college and working in 1994; 21 percent of those in high school as a sole activity in 1992 (sixth row) were enrolled in college and working in 1994.

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Display 3.5 Transitions in Work/Schooling Status from 1992 to 1994

Read across the rows to determine what percentage of respondents in a 1992 school and work category were in a particular category in 1994.

Status in 1992 ↓ / Status in 1994 →	Neither School nor Work	Looking for Work Laid-off	Work Only	High School and Work	High School and Looking	High School Only	Military	Vo-Tech	College and Work	College and Looking	College Only	All Others	Percent of Total Respondents in 1992
Neither School nor Work	22%	8%	31%	14%	4%	12%	0%	4%	1%	0%	2%	1%	4%
Looking for Work Laid-off	16%	17%	34%	9%	6%	14%	0%	1%	1%	1%	1%	0%	2%
Work Only	5%	7%	49%	21%	6%	4%	0%	2%	1%	0%	5%	0%	4%
High School and Work	3%	4%	30%	1%	0%	0%	3%	5%	32%	2%	19%	1%	55%
High School*	6%	7%	29%	2%	1%	2%	3%	5%	21%	2%	23%	1%	35%
Military	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
All Others	24%	0%	42%	11%	2%	9%	1%	6%	2%	0%	3%	0%	1%
	5%	5%	30%	3%	1%	2%	3%	5%	25%	2%	19%	1%	100%
	Percent of Total Respondents in 1994												

Sources: U.S. Department of Education, NCES, "National Educational Longitudinal Study of 1988" Second and Third Follow-up Surveys; special analysis performed at the Institute for Research on Higher Education.

*In 1992, the category "High School and Looking for Work" is contained in the "High School" category.

The Special Case of High School Dropouts

The panel studies of the high school classes of 1982 and 1992 also provide substantial data on the fate of dropouts in the 1980s and 1990s. The good news is that high school dropout rates declined in the United States by roughly 50 percent between 1982 and 1992. The bad news is that, for those who did not earn at least a high school diploma, the future promises to be as bleak as ever.

Who is most at risk among young people in the United States? Display 3.6 reports the comparable experiences of high school dropouts by gender and ethnicity for the high school class of 1982. Male students were more likely to drop out than female students, though male dropouts on average earned significantly more than their female peers. White students had lower dropout rates—about half the rate of Hispanic students—but white and Hispanic dropouts earned roughly the same amount. Economically, the most disadvantaged were African-American dropouts who, on average, were likely to earn 10 percent less than white and Hispanic dropouts.

The extreme difficulty that dropouts have in eventually obtaining a high school degree is also reflected in Display 3.6. Less than half of all dropouts (43.1 percent) had earned a diploma by 1992—ten years after expected high school graduation. Hispanic dropouts were particularly at risk, with the highest dropout rates and the lowest subsequent degree completion rates: only 39.7 percent had earned a degree by 1992.

The last column of Display 3.6—the ratio of 1991 incomes of high school dropouts compared to high school graduates who received their diploma on time—makes clear the penalty exacted when students do not earn their degrees as expected. The gap between these students and their counterparts who completed degrees in 1982 is most pronounced for females, irrespective of ethnicity, and for whites, irrespective of gender. In other words, the economic returns for obtaining a high school diploma are greater for women and whites. To some extent, this trend may explain the relatively higher graduation rates for both groups.

Because of the persistence of these patterns—and the fact that a high school degree remains the first step to economic success in the United States—federal policy has consistently focused on helping these at-risk populations complete their secondary educations and find work. (These programs are highlighted in Section VII.)

Display 3.6 Characteristics of Dropouts from the High School Class of 1982 and Outcomes Ten Years Later

	Dropout Rate	Percentage of 1982 Dropouts	Percentage of 1982 Dropouts who Obtained a High School Degree by 1992	1991 Income for 1982 Dropouts	Ratio of 1991 Income of Dropouts to those Receiving a High School Diploma on Schedule
Gender					
Male	11.3%	55.5%	42.9%	$20,993	80.0%
Female	8.6%	44.5%	43.3%	$14,869	71.2%
Ethnicity					
Hispanic	16.8%	7.9%	39.7%	$19,940	85.1%
African-American	13.2%	16.3%	48.3%	$17,526	83.9%
White	8.8%	69.9%	43.0%	$18,828	78.0%
Other	15.2%	5.9%	34.1%	$21,355	92.0%

Sources: U.S. Department of Education, NCES, "High School and Beyond" First and Fourth Follow-up Surveys; special analysis by the Institute for Research on Higher Education.

Note: Dropout status is as of August of 1982, the year of expected graduation; income figures are limited to those making at least $2,000 in 1991 (the most recent year for which reliable income figures are available).

The Impact of Economic Restructuring

Thus far, we have described—largely in terms cataloging their educational experiences—the distribution of students in the United States, the structure of a vocationally-centered market for tertiary education, and the swirling patterns that often characterize how young people begin early to combine work and learning. The fact is that in most ways, those patterns have been substantially shaped by the changing nature of the U.S. economy and resulting shifts in employment patterns and practices. In the 1990s, U.S. firms came to understand that they increasingly faced a common set of pressures rooted in the changing nature of product markets. In a 1992 survey of 531 corporations, three-quarters of the respondents cited competitive pressure from product markets as the reason for the restructuring of their organizations.[10] What was now of paramount importance was their ability to respond quickly to evolving consumer preferences.

Most corporate strategies designed to increase market responsiveness have at their core a desire to reduce the fixed-cost commitments represented by internalized employment structures, along with less of a willingness to hire and then train unskilled workers. The demand for quicker response time and broader product lines has also led to the recasting of traditional systems of work organization. The premium that firms are willing to pay for specialized skills is increasing, particularly if the firm does not have to make a long-term commitment to the employee. When the product mix changes—and, hence, the mix of required skills and competencies is altered—firms feel relatively free to discontinue current employees, replacing them with new hires or with contract workers who can be immediately productive. A second, often complementary strategy is to use cross-functional teams that allow a more fluid mixing of skills and competencies. A third, and increasingly attractive, strategy for firms competing in uncertain product markets is simply to outsource the task—leaving to someone else the job of finding the right mix of skills and competencies at a competitive price.

Restructuring and Changing Job Security

Not surprisingly, then, for most Americans—citizens and policymakers alike—the dominant workforce issue over the last decade has been the sense of declining job security associated with corporate downsizing. According to the American Management Association (AMA), which has surveyed its member companies since 1990, the incidence of downsizing among AMA companies increased virtually every year from 1990 until 1996, when 48.9 percent reported reducing their workforces; this decline was minimal compared to the year before, when the rate was 50 percent of reporting firms. While workforce reductions have been a continuing theme over the past decade, they are increasingly strategic or structural in nature, rather than representing a response to short-term economic conditions associated with declines in business. Of the 100 largest companies in the United States in 1991, 22 percent of their workforces had been laid-off since 1978; 77 percent of those cuts targeted white-collar jobs.

The increase in involuntary separations has been accompanied by a decline in voluntary quits, at least through the mid-1990s, which are typically associated with employees moving to better jobs elsewhere. Subsequently, a considerable literature developed in an attempt to measure whether average job tenure with an employer has changed in recent years. The fact that dismissals and layoffs are rising but that quits are falling has left tenure reasonably stable. However, the declines were especially great for younger workers, suggesting even greater employment instability in the youth labor market.

Contingent Work and Contracting Out

Much of the anecdotal attention given to changes at work concerns the shift from permanent jobs to the use of contractors, leased employees, and part-time and temporary workers. The phrase *contingent work* is used to reflect the fact that such work is likely to be much less stable and secure than regular jobs and more contingent on the short-term needs of the organization.

The exact extent of contingent work in the economy is a subject of intense debate. A 1993 estimate by the U.S. Bureau of the Census puts the number at 25 percent, representing a narrow definition of contract employees. A 1997 estimate of the contingent workforce found part-time work at 17.5 percent, self-employment at 11.8 percent, and temporary employment at 1.8 percent of the overall workforce, for a total of 31.1 percent. Seventy-eight percent of employers use contingent workers, a full 72 percent use part-time employees, and 40 percent expect this use to grow.

Contingent workers are paid less than permanent employees. They account for almost 60 percent of workers in the bottom decile of the wage distribution in the United States—in other words, the working poor. When compared to permanent workers, an estimate for one form of contingent worker, temporary workers, is that they earn about 14 percent less and are approximately half as likely to receive any employer-provided health care.

Certainly, a partial explanation for the rise in more contingent jobs reflects the preferences of some workers for more flexible schedules, but the evidence indicates that most of the growth is the result of changing employer demands. The pattern is clearest for part-time workers. Three-quarters of the part-time workforce indicate that they would rather have full-time jobs, and approximately four percent of all U.S. workers are in this involuntary part-time category. Of the 20 industrialized countries that form the Organisation for Economic Co-operation and Development (OECD), only the Netherlands has a higher figure—and its overall levels of unemployment are considerably higher.

For employees, particularly for young people, temporary work appears to have become the *de facto* entry-level position in the labor force. A survey conducted by the National Association of Temporary Services finds that 76 percent of temporary workers believe temporary help is "a way to get a full-time job" and that this potential is an important factor in their decision to become a temp. U.S. Bureau of the Census data suggest that 57 percent of the workers in temporary jobs in a given year were in permanent jobs the next year. Comparisons of the temp workforce to permanent employees suggest that temps are younger by about two years, are on average slightly better educated, and have almost four times the rate of unemployment. The biggest change in the temp workforce in recent years

has been the rise in the proportion of men engaged in this type of work, from 24 percent of total temp workers in 1988 to 39 percent five years later.

Hiring and Training Practices

How changes in corporate management have affected the hiring and development of employees is an interesting and important issue. Training and development are the equivalent of *making* skills, while hiring employees with those skills is the equivalent of *buying* them. Recent trends would imply that firms should find it more difficult to develop skills internally because of the uncertainty of knowing which skills will be needed and for what duration.

Anecdotal reports about successful companies and their investments in training seem to indicate that training is on the rise. When one looks at real spending on training, however, discounting for inflation, the increases in total expenditures are marginal; and because the number of employees has increased, training expenditures per employee have declined somewhat. Other studies find that the incidence of employer training rose slightly for prime-age workers, aged 35 to 54, from 1990 to 1995 but declined for all other age groups, including young people.

There also have been changes in the type of training provided by employers over time. For example, training to qualify for a current job refers to entry-level job skills, which are often imparted during general training that is equally useful to other employers. From 1983 to 1991, the incidence of such training was essentially unchanged for the workforce as a whole, but the length of training—a proxy for the amount of training provided—declined substantially. Declines in both the incidence and length of such training were especially sharp for high school dropouts. For workers with less than ten years of seniority, the incidence was about the same, but the decline in the length of such training was especially large. The incidence of employer-provided training to improve skills on one's current job, on the other hand, rose over this period.

Employers are now making less of an investment in the skills of new employees for the purposes of learning a job. Greater fear that the training investment would be lost—either through layoffs or quits—would produce a reduced incentive to invest. Employers are likely to make a greater investment in upgrading the skills of existing workers, perhaps under pressure from the demands of changing work organization. Other research has shown how an external labor market shapes the internal training decisions of employers—for example, that how much training a firm is willing to pay for depends on how difficult it is to find suitable applicants.

Wage Trends

Workers in the United States—and young workers, in particular—do not earn more than they did over a decade ago. Although the economy is currently strong, wages (in real dollars) have stagnated or declined for most of the population; only those in the 90th percentile of the income distribution have experienced real gains. When the weekly incomes of young people are disaggregated by education level and demographic group (Display 4.1), several disparities emerge. Overall, young workers without a bachelor's degree are losing ground economically: their weekly earnings in annual constant dollars have decreased since 1981. This drop was

relatively higher for young high school dropouts and those with just a high school diploma.

Display 4.1 Weekly Earnings of Youth (Aged 16 to 26) Working Full-Time and Not Enrolled in School by Education Level, Gender, and Ethnicity in 1996

	1996 Weekly Earnings	1981 Weekly Earnings in 1996 Dollars	Annualized Rate of Change
Education Level			
No High School Degree	$224	$366	-3.2%
High School Degree	$287	$388	-2.0%
Some College	$346	$441	-1.6%
Bachelor's or More	$521	$522	0.0%
Gender			
Male	$346	$460	-1.9%
Female	$326	$355	-0.6%
Ethnicity			
White, Non-Hispanic	$366	$423	-1.0%
African-American	$234	$373	-3.1%
Hispanic	$294	$376	-1.6%

Sources: U.S. Bureau of the Census and U.S. Bureau of Labor Statistics, "Current Population Survey" (CPS), October 1981 and October 1996; special analysis by the Institute for Research on Higher Education.

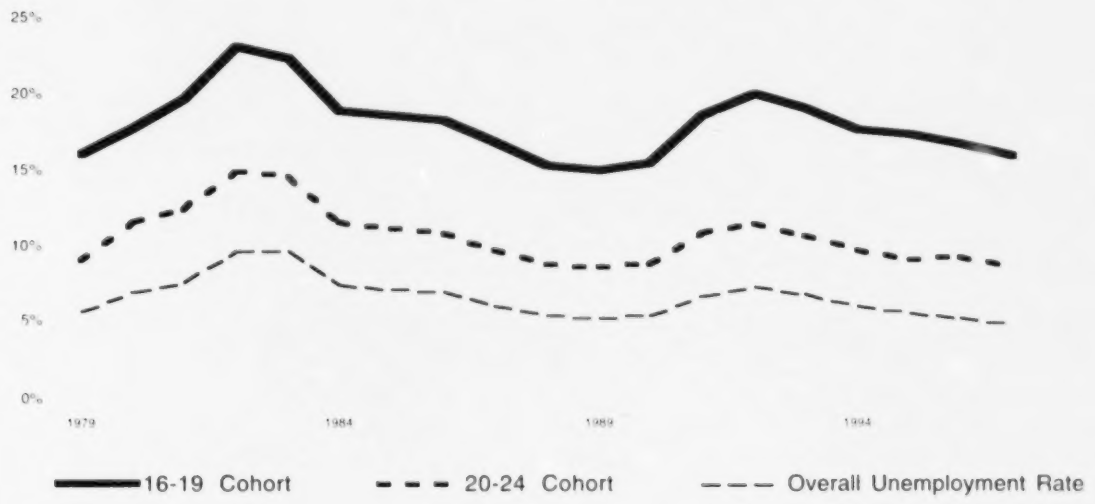
Key Implications for the Youth Transition to Working Life

The central implication of these issues for the youth labor market is a dramatic decline in entry-level jobs offering steady advancement and stability. Employers are dismantling internal career ladders and are beginning to withdraw offers to employees of long-term jobs and substantial investments in employee education and training. In earlier periods, the goal for youth labor market policy was primarily to find young workers good entry-level jobs, where they would receive training and skills that would ensure them a lifetime of employers. The goal now is more complicated, since traditional entry-level jobs are increasingly in short supply. The closest substitute for entry-level work is employment by a temporary agency or contracting firm, which supplies some training but little employment stability. Overall, the responsibility for training and developing employees is shifting away from the employer, though it is unclear where that responsibility now resides. The emerging belief of many employers is that it is the employee who must invest in his or her own skill acquisition and advancement—a prerequisite that has significant implications for young people, particularly in the paths they choose to take through their educations and the transitions they make into the labor market.

General Context

In the United States, patterns of youth employment—in particular, youth unemployment—roughly mirror the experiences of all workers in the economy. Display 5.1 demonstrates how strikingly similar youth unemployment rates are to that of the entire population. A trend that has persisted for almost two decades, it serves as one indication of how closely tied work and schooling experiences are in the United States—even for high school-aged (16- to 19-year-old) and college-aged (20- to 24-year-old) youths.

Display 5.1 Unemployment Rates: 1979 to 1997



Source: U.S. Bureau of Labor Statistics, *Employment and Earnings*, January 1979 through January 1997.

It is also the case that the cost of restructuring in the U.S. economy has been disproportionately borne by young workers. By the mid-1990s, young workers faced persistent job rationing and declining real wages. Their only advantage was that there were fewer of them—with 6 million fewer young people competing for jobs, their participation in the labor force increased from 69 percent in 1981 to 83 percent in 1996, while the proportion of those working full-time increased from 74 percent to 84 percent over the same period.[11]

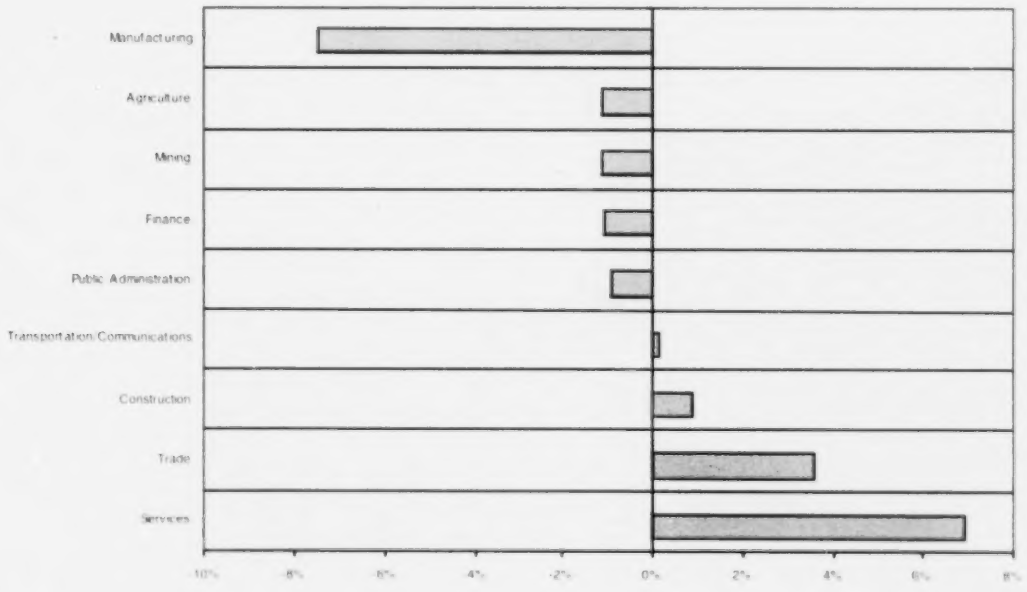
Offsetting this increase in employment were three substantial losses, beginning with the disappearance of more than 1.6 million manufacturing jobs between 1981 and 1996. At the beginning of this period, 19 percent of young workers in the United States were employed in full-time manufacturing jobs, yet by 1996 only 14 percent of youths worked full-time in manufacturing.[12] This same cohort also

lost an additional one million jobs in the military: since 1987, the U.S. military has reduced by two-thirds the number of young people it recruits. These lost military placements represented good jobs—with good pay, excellent benefits, opportunities to acquire technical skills, and further educational benefits after service.[13]

The decline in the number of good jobs available to young workers was accompanied by a general and persistent decline in the wages they were paid. As noted in Section IV, compared with their counterparts of a decade earlier, young workers in the early 1990s were likely to have jobs for which they were paid less. When their education, gender, ethnicity, and industry of employment are taken into account, young workers in the 1990s were, on average, earning more than 10 percent less in constant dollars than their counterparts in the 1980s.[14]

Significant shifts have also occurred in the share of youth employment by industry over time (Display 5.2), primarily a movement from Manufacturing to Services and Trade. From 1981 to 1996, there were substantial losses in the share of youth employment in Manufacturing, which declined by 8 percentage points, and smaller losses in Agriculture, Mining, Finance, and Public Administration. Gains in the share of youth employment over this period were in Services (7 percentage point gain), Trade (4 percentage point gain), and Construction (1 percentage point gain).

Display 5.2 Percentage Change in Share of Employed Youth Aged 16 to 26: 1981 to 1996



Sources: U.S. Bureau of the Census and U.S. Bureau of Labor Statistics, "Current Population Survey" (CPS), October 1981 and October 1996; special analysis by the Institute for Research on Higher Education.

Churning and the Youth Labor Market

The issue of stability in youth employment is a subject of a lively debate among economists in the United States. Early labor market experiences of young people are often characterized as being fraught with *churning*—frequent job changes between part-time jobs and periods of joblessness.[15]

Between the ages of 18 and 27, the average high school graduate who did not pursue tertiary education held almost six different jobs and experienced four or more spells of unemployment.[16] In addition, workers who experienced more unstable employment in the first year or two after leaving school tended to continue in unstable employment three or four years later.[17] Education levels clearly affect the transition from initial schooling to working life: young people with higher levels of educational attainment experience more stable employment after they leave school. The school-to-work transition is smoothest for four-year college graduates and roughest for high school dropouts, compared to high school graduates or those with some college.

The debate is over whether the turbulent nature of youth labor markets has potentially beneficial effects, since there is compelling evidence that workers receive positive returns to job shopping in the form of incrementally higher wages with each job change.[18] In addition, some researchers argue that, as workers move from job to job, they learn how to develop their skills, aptitudes, and interests.[19] The question remains about whether churning itself is a way for young people to transition into better jobs over time, about whether it is an efficient or inefficient method for imparting knowledge and skills.

The perception that turbulent initial experiences in the labor market are not beneficial for young people became one of the prevailing reasons for establishing youth employment and school-to-work policies in the United States, particularly for young people who did not hold bachelor's degrees. In addition to increasing wages by improving the skills of youths, the first school-to-work initiatives were intended to create new institutional arrangements and networks that could serve as a remedy to persistent unemployment and job instability for young adults. To the extent that school-to-work programs help to reduce dropout rates, improve academic achievement, and impart work-related skills, they may facilitate a smoother transition to stable and learning-intensive employment for young people.[20] (These programs are highlighted in Section VII.)

New Questions

Transitions from initial education to working life are as much about where young people work as about what schools teach them before they leave. Viewed from this perspective, what employers want from their young hires and expect of the schools they attended becomes an intriguing part of the mix. When times were simpler, when proceeding from school to work meant finding an entry-level job nearby that promised training and internal advancement, most employers' involvement with local schools was informal—as parents, as citizens and neighbors, but not as customers concerned with the quality of graduates. Most employers wanted good workers who were often the products of the same schools that taught their own children. Hiring and screening ordinarily involved local networks: friends recommending the children of friends, if not members of their own families.

Changing employment patterns compounded by changing patterns of personal mobility have largely broken those informal connections between employers and schools. With more young people enrolling in tertiary education and moving to other communities afterwards, often as members of an expanding contingent workforce, employers have become more critical of and yet less connected to their local schools—less dependent on them for permanent workers, more remote from the schools' growing list of social problems, less willing to support the local tax levies schools request. During a focus group convened to help gauge employers' willingness to offer youth apprenticeships, one employer put it bluntly: "I am not a great fan of our local high schools. But what I want in a new worker no high school can supply: a twenty-six-year-old with three previous employers."[21]

This growing sense of disconnection raises a host of new questions about what employers want, need, and expect from the young workers they hire. What kinds of skills and attitudes ought they bring with them to the work site? What does the employer want to know about the young job applicants they consider? Are grades, teachers' recommendations, and school reputations good measures of likely on-the-job performance? If employers are unhappy with the supply of young workers, how willing are they to partner with schools in order to establish more realistic expectations on the part of the young about what work entails and what one needs to know to be successful? How willing are employers to join in the effort to reform schools, to participate in the development of work-based curricula, to offer youth apprenticeships, or to provide internships? Under what conditions are employers likely to see their work sites as learning sites as well?

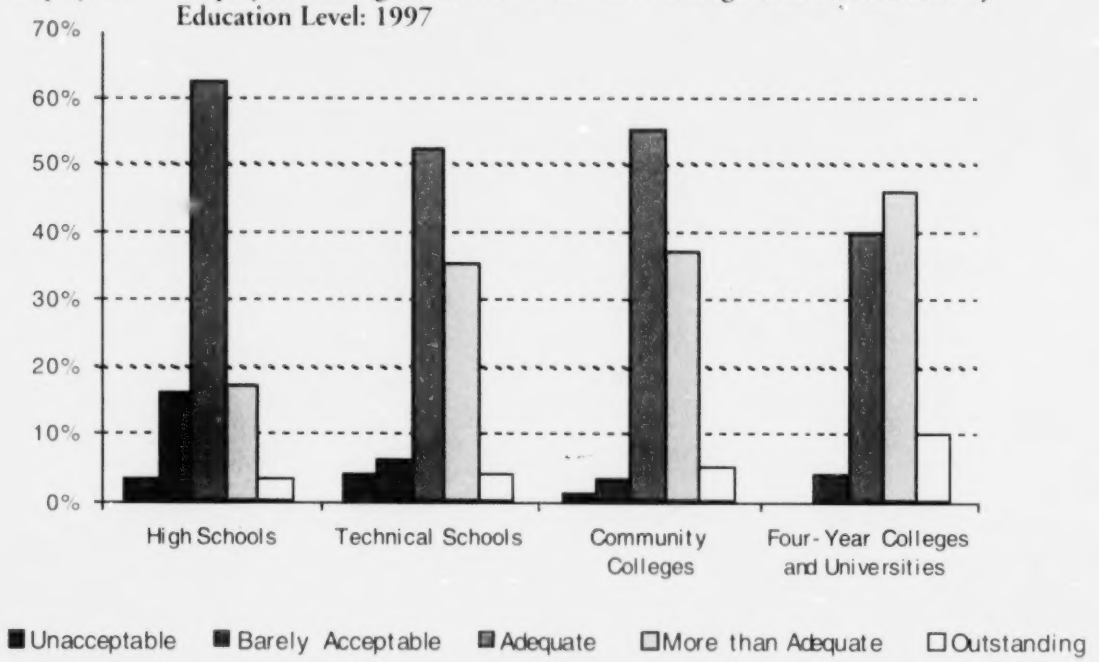
The baseline for much of the research currently focusing on what employers want was established in 1994 by the first National Employer Survey, designed by a U.S. Department of Education Research and Development Center and administered by the U.S. Bureau of the Census. Based on a stratified sample of establishments with 20 or more employees, the first National Employer Survey documented the growing disconnection between schools and employers, leading a front page *New York Times* headline to proclaim "Employers Wary of School System."[22] Administered again in 1997, an expanded National Employer Survey provided

additional detail documenting which employers were and were not likely to become active participants in programs to ease the transition from initial education to working life.

How Well Do Schools Prepare Their Graduates for Work?

Two words best describe the perspective of most employers when discussing young people and the schools they attend: ambiguity and ambivalence. When asked to rate the work readiness of the high school graduates they had considered for positions, employers gave an overwhelmingly neutral response. More than 60 percent said these graduates were "adequately" prepared for work; 19 percent said the preparation of high school graduates for work was "barely adequate or unacceptable"; another 20 percent reported most of these graduates they saw were either "more than adequate or outstanding" (Display 6.1).

Display 6.1 Employers' Rating of the Work Readiness of High School Graduates by Education Level: 1997



Sources: The National Employer Survey, 1997 Administration; special analysis by the Institute for Research on Higher Education at the U.S. Bureau of the Census, Center for Economic Studies.

Employers rated local technical school and two-year community college graduates similarly and slightly better than the high school graduates they considered for positions: at almost the same rate, employers considered more of these graduates to be "more than adequately" prepared for work. The primary responses, however, still indicated just adequate or less than adequate preparation.

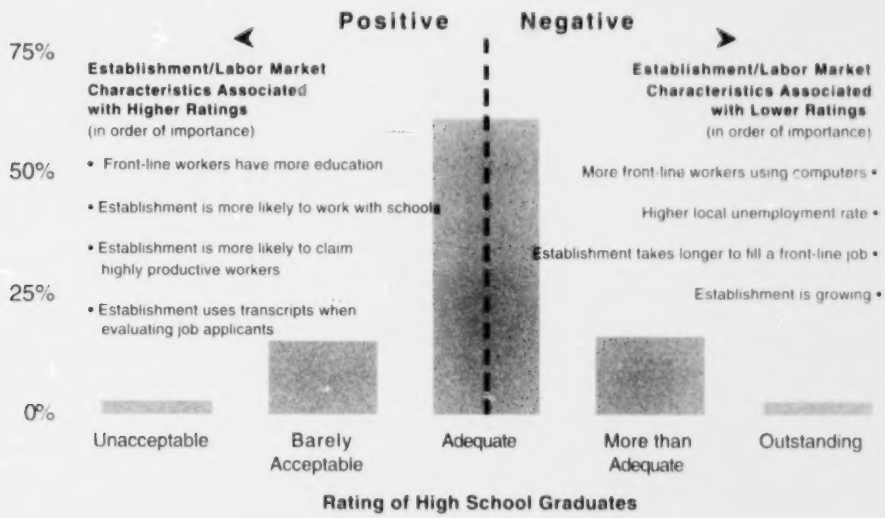
These same employers' perceptions shifted substantially when assessing graduates of four-year colleges and universities. While a large number also gave four-year college graduates an "adequate" ranking (40 percent), far more indicated genuine

rated the performance of graduates of four-year institutions as "more than adequate," while 10 percent answered "outstanding." Within this sample of employers, no one thought that, on average, college graduates' preparation for work was "unacceptable."

The full set of ratings (graduates of high schools, technical schools, community colleges, and baccalaureate institutions) reflects the fact that most employers consider schools as an ordered set of institutions. Almost universally, employers rated the graduates of the four kinds of educational institutions in precisely the same order—whatever their opinion of local high schools, they thought better of technical schools and community colleges, and still better of colleges and universities.

Underlying many of these employers' perceptions—particularly of high school graduates—was an intriguing commingling of educational and labor market conditions. Most of the neutral-to-negative ratings given to high school graduates' preparation for work reflected local economic circumstances: establishments in tighter labor markets with higher unemployment rates, establishments having trouble hiring front-line workers who used computers, and growing establishments (Display 6.2). More positive views came from establishments that were more likely to work with their local schools, to consider transcripts as important sources of information when evaluating students' job characteristics, and to have highly educated and productive workers.

Display 6.2 Characteristics that Affect Employers' Ratings of the Work Readiness of High School Graduates


Positive
Negative
75%
50%
25%
0%
Establishment/Labor Market Characteristics Associated with Higher Ratings
(in order of importance)
• Front-line workers have more education
• Establishment is more likely to work with schools
• Establishment is more likely to claim highly productive workers
• Establishment uses transcripts when evaluating job applicants
Establishment/Labor Market Characteristics Associated with Lower Ratings
(in order of importance)
More front-line workers using computers •
Higher local unemployment rate •
Establishment takes longer to fill a front-line job •
Establishment is growing •
Unacceptable
Barely Acceptable
Adequate
More than Adequate
Outstanding
Rating of High School Graduates

Source: Daniel Shapiro and Maria Iannozzi, "The Benefits of Bridging Work and School," in *The Annals of the American Academy of Political and Social Science*, Volume 559, September 1998, pp. 157-166.

For most employers, an applicant's level of schooling was all they needed to know about his or her educational experiences. Relatively few employers used schools as a source of job applicants. Few thought that the opinion of teachers, the school's reputation, or the applicant's grades were important to either the screening or hiring process. In 1997, employers were asked to rate the importance of various sources for identifying applicant pools on a scale of 1 (not important) to 5 (very important). Display 6.3 contains employer responses to that question, ordered from highest to lowest average score. Not institutions or programs but informal networks are what characterized employers' notions of how best to acquire the workforces they needed.

Display 6.3 Employers' Rating of the Importance of Various Sources for Finding Job Applicants: 1997

Applicant Source	Average Score
Employee Referrals	3.63
Newspaper Ads	3.07
Job Postings	2.63
Unsolicited Inquires	2.54
Colleges	2.06
Technical Schools	2.02
Public Employment Agencies	1.93
High Schools	1.90
Private Employment Agencies	1.80

Source: Daniel Shapiro and Margaret Goertz, "Connecting Work and School: Findings from the 1997 National Employer Survey," unpublished paper presented at the annual meeting of the American Educational Research Association, San Diego, California, April 15, 1998.

When asked to rank the criteria used to hire new front-line workers, employer responses yielded similar results (Display 6.4): on a scale of 1 (not important) to 5 (very important), the two critical factors were an applicant's performance in interviews and the information supplied on the establishment's application form. Employer references, applicant resumes, drug and alcohol testing, and even tests administered during the interview process ranked higher than schooling factors in these employers' hiring decisions.

Display 6.4 Employers' Rating of the Importance of Various Factors for Making Hiring Decisions: 1997

Factor	Average Score
Interviews	4.62
Application	4.44
Employer References	3.86
Resumé	3.54
Drug and Alcohol Tests	2.41
Test Given at Interview	2.30
Teacher References	2.04
Work Samples	1.82
Other High School Information	1.63
Transcripts	1.60

Source: Daniel Shapiro and Margaret Goertz, "Connecting Work and School: Findings from the 1997 National Employer Survey," unpublished paper presented at the annual meeting of the American Educational Research Association, San Diego, California, April 15, 1998.

What did these employers want in a new hire? A ranking of characteristics on the same scale used above documents the primary importance of the applicant's attitude, communication skills, and previous job performance (Display 6.5). Although years of schooling and skills certificates were a factor in employers' screening and hiring decisions—which most likely reflects minimum educational requirements for a position—the great majority of employers reported paying little or no attention to measures of in-school performance to differentiate among applicants.

Display 6.5 Employers' Rating of the Importance of Various Applicant Characteristics for Making Hiring Decisions: 1997

Applicant Characteristic	Average Score
Attitude	4.60
Communication Skills	4.07
Previous Job Performance	4.04
Full-Time Work Experience	3.75
Industry Based Credentials	3.18
Education Level	2.89
After-school or Summer Work	2.62
Technical Course Work	2.52
Academic Performance	2.47
Extracurricular Activities	2.31
General Course Work	2.30
School Reputation	2.00

Source: Daniel Shapiro and Margaret Goertz, "Connecting Work and School: Findings from the 1997 National Employer Survey," unpublished paper presented at the annual meeting of the American Educational Research Association, San Diego, California, April 15, 1998.

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Employer Participation with Local Schools

While the principal findings of the National Employer Survey document the substantial gulf separating schools and employers—suggesting the magnitude of the task facing those who would count on employers to help facilitate school-to-work transitions—there were also important indications of when, why, and with what results some employers were likely to partner with local schools. As part of the 1997 administration of the National Employer Survey, employers were asked about their involvement in school activities and formal school-to-work partnerships, defined by the National School-to-Work Office as joint activity between schools (including colleges and universities) and employers connecting school-based and work-based learning. One of every four establishments reported that it participated in formal school-to-work partnerships; and one of every three reported that it engaged in some form of work-based learning, including job shadowing, mentoring, internships, apprenticeships, and cooperative education.[24] What these programs represent is breadth as well as depth of engagement—more than serving on boards and participating nominally in local school activities, these employers reported opening their doors to students, making their work sites places of directed learning.

Display 6.6 Percentage of Establishments Reporting Participation in Various School-Related Activities: 1997

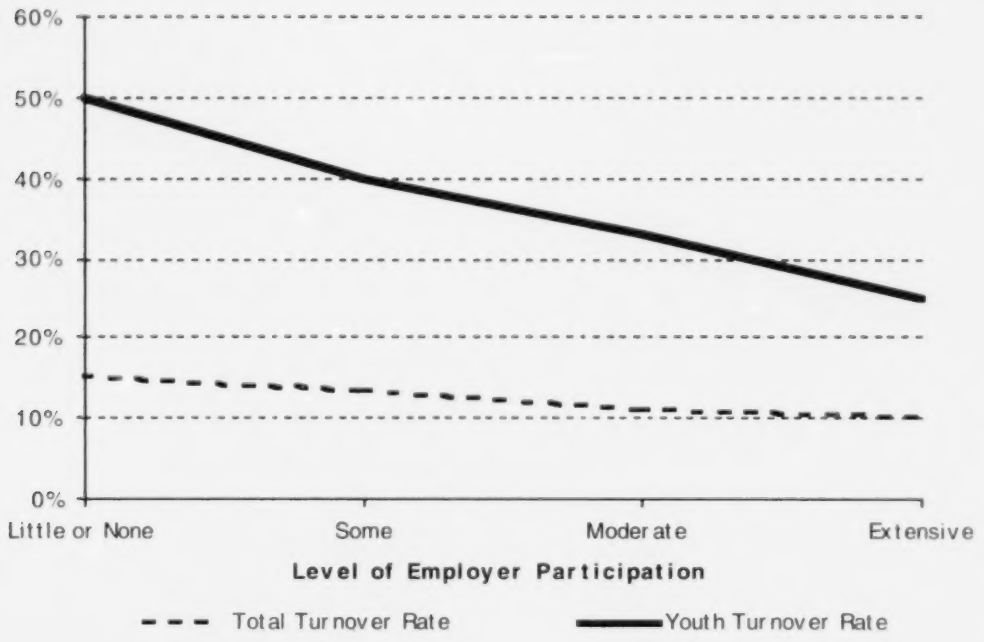
Type of Activity	Percent of Participating Establishments
Donates Materials to Schools	53%
Works on K-12 Reform through Company Communications	35%
Hosts Student Visits to the Worksite	34%
Works on K-12 Reform through the Local Media	31%
Works on K-12 Reform through Community Forums	30%
Visits Students in School	28%
Works on K-12 Reform through Industry Associations	28%
Sponsors Student Scholarships	24%
Works on K-12 Reform through Advisory Committees	23%
Assists in Communicating Business Practices	19%
Sponsors Before- or After-School Programs	12%
Sponsors Youth Clubs	10%
Teaches in Classroom	10%
Tutors Students	9%
Assists with Curricular Development	9%
Assists School-based Enterprises	8%
Assists with Professional Development for School Personnel	6%
Sponsors Teacher Scholarships	6%

Source: Daniel Shapiro and Maria Iannozzi, "The Benefits of Bridging Work and School," in *The Annals of the American Academy of Political and Social Science*, Volume 559, September 1998, pp. 157-166.

One feature of the U.S. labor market and its ties to local schools is the innumerable ways for employers and schools to engage in partnerships. Employers were asked to report about a wide variety of activities in which they worked with local schools, and Display 6.6 documents the percentage of establishments that reported participating in each activity. Although donating materials to schools represented the most common activity, the findings highlight the substantial rates at which employers engage in K-12 reform, either through industry associations, advisory committees, community forums, local media outlets, or corporate communications functions.

Were there benefits associated with such participation? Did school-employer partnerships confer either economic or educational advantages, or both? The most intriguing finding from the National Employer Survey was a substantial difference in the annual quit and fire rates of young workers (aged 18 to 25) in establishments that did not participate in school partnerships and those that did (Display 6.7). Establishments that ranked in the top quartile of participation (those that engaged in eight or more activities) had *half* the youth turnover rate of establishments in the bottom quartile—half the churning, half the rate at which young workers either quit or were fired.

Display 6.7 Relationship between the Level of Participation of Employers in Local Schools and Annual Youth Turnover Rates



Source: Daniel Shapiro and Maria Iannozzi, "The Benefits of Bridging Work and School," in *The Annals of the American Academy of Political and Social Science*, Volume 559, September 1998, pp. 157-166.

It is a quintessentially American pattern. Most employers do not engage their local schools, do not offer work-based learning, do not use school measures—other than highest credential earned—when making hiring decisions. On the other hand, roughly one-quarter of the nation's employers do partner with schools and do have more stable youth labor forces—and therefore have less need to recirculate young workers and greater opportunity to invest in entry-level workers' skills and careers. While these firms reported spending more on each individual hire, in the aggregate their hiring costs were lower and presumably their productivity greater.

Still, the direction of the causality of this relationship is not clear. Did employers who worked with schools have greater access to those schools' best graduates and, hence, the best potential employees? Or, did employers' successful experiences with young workers lead them to seek out school partnerships? Were these just good citizen firms, good employers, good places to work, good businesses to have as neighbors? The answers to these questions probably matter less than an understanding that, within the American context, there is a substantial stratum of employers who are willing to work with schools to make more ordered and productive the transition from school to work—and that associated with those partnerships is the kind of job stability for young workers that many believe is as important to the firm as it is to the young worker.

SECTION SEVEN: PUBLIC AND LOCAL INITIATIVES SINCE 1980

The Making of Public Policy in the United States

Much of the history of public policy in the United States can be summarized as the ebb and flow of tensions between federal and state initiatives. In times of war and substantial economic dislocations, it is the federal or national initiative that dominates. In the intervening periods, the states have generally moved to reclaim the initiative, successfully insisting that it is local policy and practice which ensures that government, at all levels, remains closest to the people.

For the last two-thirds of the this century, beginning with the Great Depression and the Second World War and continuing through the Cold War, truly national issues have held center stage—with the exception of educational policy. Beginning in the late 1960s with the Great Society legislation of the Johnson administration and continuing through the Nixon and Carter administrations, educational reformers succeeded in enlisting the federal government and its revenues in the cause of educational betterment. More recently, the pendulum appears to have swung again, reinforcing the idea that education is a local matter that the federal government can best assist through the awarding of block grants that local agencies can decide how best to spend. In both cases, the process of policy formation follows roughly the same pattern: a raising of national consciousness, followed by a series of targeted initiatives that over time come to represent the sum of public policy in that domain.

Given these tensions, public policy in the United States is most often made by doing—making public policy itself a summation of often disconnected public acts and regulations promulgated at both the state and federal levels. Because party discipline is relatively weak in the United States, there are no true party platforms or ideologies to which party members are expected to adhere: hence public debate, like public policy, is often fragmented and episodic.

Occasionally, however, a general consensus becomes possible, though it is most likely to be the result of an extraordinary event or crisis that allows a general coalescing of aspirations and perspectives. That coalescing often begins when a national report suddenly, even unexpectedly, "catches fire." In the next stage, the report engenders a variety of new initiatives, usually at the federal level. If the discussion of the report is sustained enough and the federal initiatives develop enough momentum to trigger state action, then the ensuing programs and policies, along with the rationale embedded in the initial report, yield what in the United States is considered to be coherent public policy.

A Nation at Risk

Four times over the last two decades, national reports have helped redefine how the United States sees education in general and the transition from schooling to productive employment in particular. Each report reflected a sense that the U.S. economy was losing its competitive edge. Other nations' schools were proving more adept in turning their students into adaptable, work-smart employees. Not

surprisingly, the first and still the most powerful of this set of national reports took as its title *A Nation at Risk*, arguing that only a fundamental recasting of the nation's schools and colleges could stem what the National Commission on Excellence in Education saw as a rising tide of mediocrity:

> [W]hile we can take justifiable pride in what our schools and colleges have historically accomplished...the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future.... If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war. As it stands, we have allowed this to happen to ourselves.[24]

What *A Nation at Risk* proposed was nothing less than the revitalization of education in the United States. To measure progress, it provided a lengthy list of benchmarks against which U.S. students did not measure up—not in math, not in science, and decidedly not in preparing young people for jobs.

Four years later, *Workforce 2000*, a report by the U.S. Department of Labor in collaboration with the Hudson Institute, made the case that workforce skill requirements were rising at a faster rate than U.S. education could accommodate. The "missile gap" of the 1960s had been replaced by the "skills gap" of the 1980s. Published in 1987, *Workforce 2000* gave specific content to the more rhetorical thrusts of *A Nation at Risk*. More to the point, *Workforce 2000* made clear that the emerging skills gap would affect the prospects of all young Americans and not just the historically disadvantaged. The effect was to help make education and work a more broad-based concern, one potentially capable of galvanizing large numbers of anxious parents worried about the economic security of their children.

The next year, the William T. Grant Foundation Commission on Work, Family, and Citizenship shifted attention back to the problems of those individuals who were either not in the labor force or who resided at the lower levels of the employment hierarchy: the "forgotten half" who did not pursue college education and who were rarely the focus of education policies. The Commission's report, *The Forgotten Half: Non-College Youth in America*, sought to reverse the trend that made a college education the only acceptable outcome for increasing numbers of middle-income Americans—too much attention was being lavished on too few students in too many schools; too little was being invested in the kinds of vocational programs that would prepare successful students for a changing labor market. *The Forgotten Half* made the school-to-work transition a new focus for educational policy and practice, arguing that what should be expected of employers was better entry-level jobs and a willingness to participate in programs providing internships and apprenticeships. What the nation required at this educational and economic juncture was both an expansion and an improvement of second-chance programs for young people.

Then, in 1990, the National Center on Education and the Economy's Commission on Skills in the American Workforce published what would become the summary mantra on American competitiveness and the diminished quality of American schools. *America's Choice: High Skills or Low Wages!* argued for European-like apprenticeship systems, a recognition of the growing importance of what Robert Reich called symbolic analysts, and the need for employers to take a more direct interest in schools because, quite literally, their economic well-being depended on the kind of revitalization for which *A Nation at Risk* had called.

Because the Commission's three overarching recommendations—establish high educational standards and the means to achieve them, create clear educational pathways with a focus on careers, and get employers more involved in education, primarily by providing work-based learning—played an important role in the 1992 presidential election, the report set the stage for the development of education and workforce development policy in the Clinton administration.

Building School-to-Work Networks

America's Choice: High Skills or Low Wages! and the debate and discussion it engendered also represented an important shift in educational perspectives: what the United States appeared ready to consider was a set of initiatives designed to make more systematic programs of workforce development as part of a general strategy for reviving the American economy. Many of those systems would be national in scope, calling for altered as well as more regularized relationships between schools and employers and for making work sites primary learning sites for young workers. Two international examples were touted as likely models: the German apprenticeship system and the Japanese system of formal on-the-job training.

In the end, the notion of building a new school-to-work system lost out to the realities of American politics, the reluctance of employers to embrace the idea of German-style apprenticeships, and the hostility of unions that already had established registered apprenticeships. Many worried that youth apprenticeships, which tracked students into a single educational/career path, would lessen rather than provide additional educational opportunities by erecting a nearly permanent barrier for these students from eventually earning a baccalaureate degree. The failure of Congress in 1994 to create a national system for providing health care made the task of establishing a school-to-work system that much more problematic.

Nonetheless, an important corner had been turned. The transition from initial education to working life—in the United States often reduced to the school-to-work transition or transitions—became a subject of both public policy and public investment. In 1994, the Congress passed and the President signed the School-to-Work Opportunities Act, creating a National School-to-Work Office jointly administered by the U.S. Departments of Labor and Education—in itself an important signal that work and education were increasingly to be seen as a joint venture. In 1994, the National School-to-Work Office began making grants to states to underwrite new programs and, where appropriate, to supplement or expand ongoing efforts to strengthen the transition from school to work. Such grants were intended:

1. to establish a national framework within which all states can create statewide School-to-Work Opportunities systems . . . ;

2. to facilitate the creation of a universal, high-quality school-to-work transition system that enables youths in the United States to identify and navigate paths to productive and progressively more rewarding roles in the workplace;

3. to utilize workplaces as active learning environments in the educational process by making employers joint partners with

educators in providing opportunities for all students to participate in high-quality, work-based learning experiences; . . .

5. to promote the formation of local partnerships that are dedicated to linking the worlds of school and work among secondary schools and tertiary educational institutions, private and public employers, labor organizations, government, community-based organizations, parents, students, state educational agencies, local education agencies, and training and human service agencies;

6. to promote the formation of local partnerships between elementary and secondary schools (including middle schools) and local businesses as an investment in future workplace productivity and competitiveness.[25]

While much of the initial language of the School-to-Work-Opportunities Act spoke of system-building, what the Act allowed—given the range of local agencies receiving funds—was a major new investment in local networks that, on the one hand, linked employers and schools and, on the other, helped young people link their work at school to their learning at work. Rather than establishing a national system or even a national strategy, what emerged instead was a host of experiments and programs—some new, many old and well-established—that combined the new federal monies with local funds, foundation grants, employer contributions, and established federal programs for assisting both schools and disadvantaged youths.

Within this larger rubric, it is helpful to think of these networks and initiatives—both public and private—as belonging to one of the following broad categories:

- ***Facilitating Transitions***: Programs and initiatives that form links between local employers and schools to facilitate transitions from education to working life; functions include job and skills identification, job matching, and information exchange.

- ***Reducing Labor Market Uncertainties***: Programs and initiatives that seek to make more transparent how the labor market works, what kinds of investments in education are likely to pay off, what types of skills the labor market is and, just as importantly, is not likely to reward, and how best to pay for those investments.

- ***Building Networks***: Programs and initiatives that serve as clearinghouses and focal points for building networks linking schools, employers, and young people to create better connections between education and the workplace.

- ***Improving Education and Training Efficiency***: Programs and initiatives that seek to improve the skills of young people, particularly disadvantaged youths, by designing effective work- and school-based education and training programs, as well as ensuring easy access to services.

The summary table and schematic provided below are an attempt to organize these programs using the workforce development rubric outlined above.

Major Federal Legislation and Resulting Initiatives

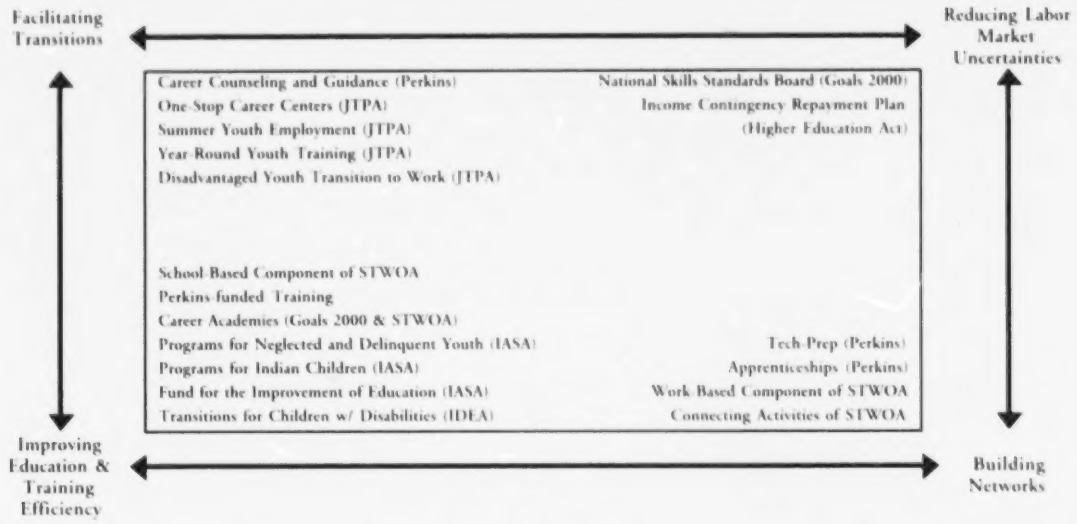
The primary pieces of federal legislation passed since 1980 that address these four education and workforce development strategies are listed in Display 7.1. In general, these Acts fund activities and initiatives designed by state and local agencies; although a few programs for disadvantaged youths are administered at the federal level, federal action tends to be limited to providing technical assistance and funding.

Display 7.1 Major Federal Legislation Addressing Education and Work

Federal Legislation	Year	Appropriations	Primary Goals
The Carl D. Perkins Vocational and Applied Technology Act	1990 Reauthorization	State Basic Grants for 97-98 Program Year: $1 billion for vocational education $100 million for Tech-Prep	• Funded state-level vocational education programs • Funded comprehensive career guidance and guidance counseling programs • Funded Tech-Prep education • Called for the integration of academic and vocational education
Higher Education Act	1992 Reauthorization		• Established an income contingency repayment plan for direct student loans issued by the federal government
The Jobs Training Partnership Act (JTPA)	1992 Amended	FY98: $871 million for Summer Youth Employment $129.9 million for Year-Round Training $1.2 billion for Job Corps $143 million for One-Stop Centers	• Funded educational/training services for economically disadvantaged youths through Summer Youth Employment programs and Year-Round Youth Training • Enacted the Job Corps Programs to address the transition of disadvantaged youths to work • Funded the development of One-Stop Career Centers that integrate services into a coherent network
Individuals with Disabilities Education Act (IDEA)	1992	FY97: $400 million	• Funded transitional services for youths with disabilities to promote movement from school to education, training, and employment
The School-to-Work Opportunities Act of 1994 (STWOA)	1994	FY97: $400 million	• Funded the design of programs (state or local partnerships) to facilitate the school-to-work transition, coordinating classroom instruction and workplace experiences for all students • Contained two components: school-based component; work-based component • Funded Career Academies
Goals 2000: Educate America Act	1994	FY97: $476 million	• Established the National Skills Standards Board to explore strategies for enhancing workforce skills
Improving America's Schools Act (IASA)	1994	FY98: $39.3 million for Prevention & Intervention $59.7 million for Indian Children $25 million for achievement of National Education Goals	• Funded Prevention and Intervention programs for children and youths who are neglected, delinquent, or at-risk for dropping out • Funded special programs and projects to improve educational opportunities for Indian (Native American) children • Funded activities with other agencies to improve education for all students, in particular to assist in the achievement of the National Education Goals

The federal government's investment in programs intended to facilitate the initial transition from education to working life were encompassed in these legislative acts. Display 7.2 distributes these programs among the four education and workforce development strategies described above. Although many initiatives combine some or all of these strategies, they are grouped and described below according to their primary goal. In addition, although many may receive funding from various public and private sources, as well as allocations from more than one piece of federal legislation, they are categorized according to their major source of revenue.

Display 7.2 Matrix of Major Federally-Funded Initiatives Related to Work and Schooling


Facilitating Transitions
Reducing Labor Market Uncertainties
Career Counseling and Guidance (Perkins)
One-Stop Career Centers (JTPA)
Summer Youth Employment (JTPA)
Year-Round Youth Training (JTPA)
Disadvantaged Youth Transition to Work (JTPA)
School-Based Component of STWOA
Perkins-funded Training
Career Academies (Goals 2000 & STWOA)
Programs for Neglected and Delinquent Youth (IASA)
Programs for Indian Children (IASA)
Fund for the Improvement of Education (IASA)
Transitions for Children w/ Disabilities (IDEA)
National Skills Standards Board (Goals 2000)
Income Contingency Repayment Plan (Higher Education Act)
Tech-Prep (Perkins)
Apprenticeships (Perkins)
Work-Based Component of STWOA
Connecting Activities of STWOA
Improving Education & Training Efficiency
Building Networks

Facilitating Transitions

Career Counseling and Guidance. The Carl D. Perkins Vocational and Applied Technology Act established basic grants for state-level programs of comprehensive career guidance and guidance counseling. Targeted to assist vocational education students primarily, the funds are used for programs that help students to identify their career interests and to understand how to develop a career that meets their personal interests and goals.

One-Stop Career Centers. The U.S. Department of Labor's One-Stop Career Centers represent an attempt to centralize information about the vast array of employment and training programs at the state and local levels—transforming a disjointed set of existing intermediaries into a streamlined and integrated service. The Centers provide these services for both job seekers and employers, as well as serve as education/training referral centers for those looking to acquire skills.

Summer Youth Employment. The Jobs Training Partnership Act (JTPA) funds Summer Youth Employment programs which offer young students jobs and training during the summer months, when they are on vacation from school. The programs include education, work experience, and support services. Strengthening students' academic skills constitutes a significapt portion of these programs, which are targeted for economically disadvantaged youths aged 14 to 21.

Year-Round Youth Training. This JTPA-funded program provides year-round training and employment programs for disadvantaged youths, both in and out of school. Students receive short-term, specific training in a classroom or through work experience and are provided assistance in finding a job. Other activities include limited internships in the private sector.

Disadvantaged Youth Transition to Work. A program administered and funded by the federal government, this initiative includes the Job Corps Program—an intensive, primarily residential, and highly supervised program of education, vocational training, and work experience. It includes activities to assist young people in choosing realistic career goals and coping with personal problems that might interfere with their decisions. The Job Corps serves youths who are economically disadvantaged and living in an environment that is "deprived, disruptive, or disorienting."

Reducing Labor Market Uncertainties

National Skills Standards Board. The National Skills Standards Board (NSSB), created by the Goals 2000: Educate America Act (also referred to as the National Skills Standards Act), is charged with establishing and promoting a national system of skills standards intended to enhance the nation's ability to compete effectively in a global economy. After development through a partnership of industry, education, labor, and community stakeholders, the system of skills standards would be voluntarily adopted by states and employers. The outcomes of establishing a system of workforce development through national standards include aiding industries in informing training providers and prospective employees of skill needs, assisting employers in evaluating the skill levels of applicants and designing training for existing workers, helping labor organizations improve employment security and provide portable credentials, enabling workers to obtain skill certification that enhances career advancement and job security, and allowing students and entry-level workers to identify the skills levels necessary for high-wage jobs.

Income Contingency Repayment Plan. This plan attempts to deal with the financial problems inherent in youth labor market uncertainties. One of the primary means of financing a tertiary education for U.S. students is through federal student loan programs: Direct Stafford loans, PLUS loans, and Consolidation loans. In some cases, students find it difficult to repay their student loans upon graduation at the standard monthly rates. The Income Contingent Repayment Plan, enacted with the reauthorization of the Higher Education Act in 1992, helps students to afford repayment by basing borrowers' monthly payments on their yearly income and loan amount. As income rises or falls, so do the student's payments. This initiative reduces the economic burden on borrowers who cannot find gainful employment or who must engage in a series of entry-level jobs or internships to begin a path in their chosen careers.

Building Networks

Tech-Prep Programs. Primarily targeted for vocational education students, Tech-Prep programs were established by the Perkins Act to facilitate the establishment of consortia of local educational agencies and tertiary education institutions. These consortia develop and operate four-year programs designed to prepare

students for a technical occupation. The first two years of Tech-Prep programs consist of secondary school (preceding graduation); during the second two years, students are engaged in tertiary education or in an apprenticeship program, leading to a two-year associate's degree or certificate. The programs provide comprehensive links between secondary and tertiary institutions—relationships that are governed by formal articulation agreements that are established and carried out between participants in each consortium.

Apprenticeships. Established as part of state-level vocational education programs funded by basic grants through the Perkins Act, formal apprenticeship programs are similar to the German, craft-based model. Apprenticeships train young people for a particular occupation and offer skill certification. In addition to skill development through structured education programs and work experiences, a critical characteristic of apprenticeships is the development of ties between employers, school systems, and youths.

Work-Based Component of the School-to-Work Opportunities Act (STWOA). The primary goal of the work-based component of the STWOA is to expose students to the opportunities, rewards, and demands of work through a continuum of activities that bring students into the workplace. These activities include actual work experiences, job training, job shadowing, mentoring, apprenticeships, and instruction in general workplace competencies.

Connecting Activities of the STWOA. These activities connect the school- and work-based components of school-to-work preparation programs, developing long-term relationships between employers, schools, and communities. For example, an employer might appoint a school site mentor to act as a liaison between the employer and a student's teacher, school administrator, or parent. In another example, a school might provide technical assistance to aid a local employer in designing work-based learning programs. Overall, the activities are intended to promote the active participation of employers and schools in the partnerships in order to match students with appropriate forms of work-based learning experiences; train teachers, mentors, and counselors; and help graduating students with their job search or the continuation of their education. The connecting activities coordinate classroom instruction and workplace experiences so that the former reinforces the latter, and vice versa.

Improving Education and Training Efficiency

School-Based Component of the School-to-Work Opportunities Act (STWOA). The STWOA encourages better transitions by increasing career awareness and preparation through integrated academic and vocational studies. The Act's school-based learning component prescribes a program of study that meets the academic standards of the respective state for the college- and non-college-bound; integrates academic and vocational learning in school; and incorporates instruction in all aspects of a chosen industry. School-based programs integrate academic and vocational education for all students—not just those who are at risk or not headed for college. The Act also calls for the development of school-based activities such as career exploration, career counseling, and the selection of a career major by the eleventh grade to help clarify educational pathways to particular occupations and provide students with exposure to career opportunities while they are in school.

Perkins-Funded Training Integrating Academic and Vocational Education. As part of its state-level vocational education program allocations, the Perkins Act funds programs that train adults and students in occupations for which job openings are projected or available. As with other Perkins programs, this intervention intends to promote the integration of academic and vocational education by infusing vocational instruction with academic material, so that students in occupational programs are assured a solid foundation of academic skills.

Career Academies. Career Academies are "schools within schools" that seek to prevent students from dropping out and to increase academic achievement by integrating coursework with applied, hands-on activities related to a particular career or field. Career academies represent a prime example of successful initiatives developed at the local level that subsequently receive federal attention and support; the STWOA helps to fund their development. (See the discussion of the National Academy Foundation under "Selected Local and Private Initiatives" below.) Career Academy students follow a different curriculum than their peers. Coordinated internships provide technical training and job experience, and the Academies focus on career areas with growing demand and ample employment opportunities in a local labor market.

Programs for Neglected and Delinquent Youth. These programs, enacted as part of the Improving America's Schools Act (IASA) of 1994, collectively serve 180,000 neglected, delinquent, or at-risk youths under the legal guardianship of 100 state-run institutions. Their purpose is to provide young people with the services needed to make a successful transition from institutionalization to further schooling or employment.

Programs for Indian Children. These programs, also enacted under IASA, serve a population of 430,000 Indian (Native American) children to improve their educational and employment opportunities. Grants are authorized to fund partnerships between schools and local businesses designed to provide Native American youths with the knowledge and skills necessary to make an effective transition from school to a first job in a high-skill, high-wage career.

Fund for the Improvement of Education. Allocations from this fund under the IASA are intended to improve the educational preparation and academic achievement of all students. The Fund can be used to support joint activities with other agencies that assist in the national effort to achieve the National Education Goals set forth in the Goals 2000 Act. These activities include those related to the transition from school to work.

Transition for Children with Disabilities. Under the Individuals with Disabilities Education Act of 1992, transitional services for 5.8 million children with disabilities are supported. The transitional services are outcome-oriented, promoting movement from school to post-school activities, including tertiary education, vocational training, integrated employment, and continuing and adult education.

Selected Local and Private Initiatives

While federal legislation enables state and local action, many initiatives spring up at the local level—prompted by a community's, agency's, or organization's concern with education and economic development within a region. Documenting the range of programs, networks, and initiatives occurring

independently at the local level is a near-impossible task. In this section, we present a sampling of programs from around the country that exemplify the four education and workforce development strategies used above to summarize these efforts.

These programs were chosen from among literally hundreds of interventions. The descriptions provide evidence of the complexity surrounding the inception and implementation of local initiatives, which often grow out of the efforts of several non-profit organizations, private foundations, employers, and local education systems and governments. Although these programs have their origins in private-sector and foundation initiatives, much of this activity represents the commingling of public and private funds that is sometimes related to federal legislation.

Local Initiatives

Project Step-Up (Hartford, CT). Founded by Aetna in 1985, Project Step-Up's mission is to assist the transition of disadvantaged teens from school to work by combining education and training with job experience and, ultimately, the promise of full-time work. Students, who are referred by their schools, enter the program at age 15; Aetna only accepts a percentage of the referred students. The program includes 15 two-hour, after-school classes over five months at the Aetna site, covering subject areas such as business ethics, writing, math, and computing. Students who complete the courses are guaranteed jobs with Aetna while they are enrolled in secondary education. On the job, students are assigned mentors who provide personal counseling and assistance with homework, as well as serve as role models. After high school graduation, most participants join Aetna as permanent, full-time employees. Others who pursue tertiary education are employed by Aetna during the summer months.[26]

Boston Compact (Boston, MA). The Boston Compact is probably the best-known and most well-regarded private initiative for improving the school-to-work transition. Driven by Boston's Private Industry Council (PIC), which in 1982 began working with the school system to improve the prospects of the city's young people, the Boston Compact states in clear, measurable terms what participating parties were expected to contribute. The Boston business community had been dismayed at the poor academic achievement of local high school graduates and negotiated an agreement with local public schools to reduce their dropout rate and improve daily attendance. Employers, in turn, pledged to provide summer and after-school jobs for students and to place a priority on hiring public school graduates. The initiative has produced concrete results: in 1995, more than 3,300 youths were employed in the summer jobs program. A second commitment by the PIC and the school system was to place a career specialist in each high school to prepare students for the workplace and help match them with employers. A third outcome of the Compact was ProTech, a youth apprenticeship program that began in 1991 for the health care field and has since been expanded to five other fields.[27]

Northern Tier Industry Education Consortium (Susquehanna Valley, PA). The local Procter & Gamble (P&G) paper plant in Mehoopany, PA, had identified an incentive to reduce the costs it incurred for retraining technicians: if P&G could hire someone at the age of 20 and if that person stayed with the company for a significant period of time, it would dramatically reduce its retraining costs. At the same time, Pennsylvania had already begun efforts to develop an aggressive

economic development strategy to support key industries, which included youth apprenticeships. P&G was one of the first employers on board and teamed up with other area businesses, schools, and colleges to form the Consortium. In May of 1993, P&G was joined by four other companies to enroll the Consortium's first ten high school students. By 1996, 40 companies, 16 school districts, and 115 apprentices were involved. The four-year apprenticeship program begins in the final two years of high school and continues through the first two years of tertiary education. While in high school, students work at a plant two days each week and attend school for three days. Four hours each week are spent in classes in the company's training facility; the work-based curriculum combines basic machine skills with the cognitive reasoning and social skills needed to succeed in a modern manufacturing environment. In addition, every student has a mentor. Graduates are given a preference in hiring, though not a guarantee of employment.[28]

Business Youth Exchange (Portland, OR). In this network-building initiative, the Portland Chamber of Commerce organizes forums for local business representatives to meet with Roosevelt High School freshman and discuss work-related issues, such as communications and employability skills. The program also encourages employers to participate in job shadowing as part of a local school's program to develop career pathways for students.[29]

Career Partners, Inc. (Tulsa, OK). Initiated in 1990 by officials from Hilti, Inc., Tulsa's mayor, and the local chamber of commerce, Career Partners, Inc. began as a smaller program to develop traditional, European-model apprenticeships in metalworking. In 1994, the Chamber of Commerce decided to use the program's basic infrastructure and expand it into other industries, including health care, small business and entrepreneurship, and transportation. By 1996, it served approximately 460 students and involved 50 companies. The goal is to make some combination of school-based and work-based learning available to all 6,000 Tulsa seniors by the year 2000.[30]

Capital Area Training Foundation (Austin, TX). The Foundation emerged from a planning effort in the spring of 1991, sponsored by the Greater Austin Chamber of Commerce, to improve the transition from school to work in the Austin area, which suffered from high youth unemployment. After examining youth apprenticeships in Germany as part of the planning effort's committee, Austin officials launched the Foundation in 1993 as a non-profit, industry-led group with a mission to promote school-to-work in the region. The city pledged to provide $200,000 per year in seed funding, in addition to office space for the Foundation. Although the Chamber maintains close ties to the Foundation, it is a separate entity. To enlist support, the mayor convened the CEOs and site managers of area companies in the health care, high technology, and hospitality industries. The challenge was to increase work-based learning opportunities for Austin youths steadily over 10 years, until half of the region's high school students were involved. The Foundation obtained $1 million in federal grants through the School-to-Work Opportunities Act, and by 1996 was working with 14 of the region's 55 high schools. Employers have provided summer jobs for 218 youths and contributed more than $2.5 million to the effort.[31]

Education for Employment Consortium (Kalamazoo, MI). Initiated in 1986, the Consortium currently offers programs in 25 different career clusters to over 2,000 students. During the senior year, students take part in co-operative education, apprenticeships, and occupationally-based classroom work. Over 100 employers offer work-based learning, and scores of other employers are involved through participation in business advisory committees.[32]

National Academy Foundation (Miami, FL). The Academy of Travel and Tourism was initiated in the late 1980s by American Express and the Dade County Public Schools to deal with two challenges: the explosion of the travel and tourism industry, and the poor academic and workforce preparation of young people entering the field. The Academy is a magnet program that attracts student from ten surrounding middle schools. It is affiliated with the National Academy Foundation (NAF), which provides technical assistance and support to over 200 Academies across the nation. It follows the same general design as other programs in the fields of finance, travel and tourism, and public service that are affiliated with the NAF. Students usually enroll in the Academies as juniors through a school-within-school model. They take a sequence of two or three specialized courses each semester in occupation-related classes, which supplement their core academic courses taken with classmates in the regular high school. Students' work-related experiences are less intensive that in many apprenticeship programs and tend to focus more on career exploration and work-readiness skills. During their senior year, students are encouraged to enroll in a tertiary course at their high schools or nearby colleges, and employers offer scholarships for further tertiary education. In 1989, American Express launched a similar foundation in New York City to help spread the use of the Academy model nationwide.[53]

Private and Foundation-Sponsored Networks

The following are examples[54] of privately funded or foundation-sponsored networks engaged in recent policy initiatives that facilitate the transition from initial schooling to work.

Council of Chief State School Officers: State-Urban Teams (CCSSO). In 1994 and 1995, CCSSO designed a series of state-level conferences to promote inclusion of all students in school-to-work systems; it subsequently provided follow-up monitoring and special focus workshops or meetings for state teams. According to a report by the National Center for Research in Vocational Education, "through collaboration, urban and state leaders established a vision of a successful school-to-work continuum for urban youths; identified the stakeholders, structure, and resources necessary to advance the vision; developed practical strategies for meeting challenges and overcoming obstacles; and built a plan of work that identified tasks, personnel, expected outcomes, and a time frame from moving forward. Fourteen urban-state teams participated in this network."[55]

Center for Occupational Research and Development (CORD). This privately funded non-profit organization primarily provides technical assistance, is supported by membership fees, and receives no foundation or government dollars. According to its brochure, CORD is "dedicated to excellence in education and training for highly-skilled workers through new and integrated curriculum materials and processes."[56] It accomplishes this end by fulfilling a mission to "equip learners with the academic foundation and flexible technical skills that enable them to function successfully in the contemporary workplace." One of the organization's primary technical assistance activities is to assist members of the National Tech-Prep Network with the planning, implementation, evaluation, and improvement of workforce education programs.

Center for Law and Education (CLE). This organization provides leadership for improving the quality of public education for low-income students in the United States. CLE administers a national project—called Vocational Opportunity for Community and Economic Development (VOCED) and funded by private foundations—to advocate for the improvement of vocational education policy and programs. According to a National Center for Research in Vocational Education report, VOCED "has sought to align vocational education policy and programs with vocational-academic integration linking high-level academic content with experiential learning, engaging students in learning all aspects of the industry, ensuring that students have the access and services needed for success, and promoting community participation in planning."[57] CLE also provides direct technical assistance to selected cities.

National Center for Education and the Economy (NCEE). A major contributor to the school-to-work movement in the United States, NCEE has helped to develop national standards and assessments. It also forged the National Alliance in Restructuring Education (NARE), a partnership of states, schools, corporations, foundations, and non-profit organizations founded in 1989 to help students achieve high academic standards. The project is funded by grants from The Pew Charitable Trusts and the New American Schools Development Corporation, as well as through membership dues. Since its inception, NARE partnerships have grown to reach nearly five million students in over 9,000 schools across the United States in cities such as Chicago, Pittsburgh, Seattle, and San Diego, as well as in states such as Kentucky and Arkansas. The network created by NARE is impressive: corporate partners include Apple Computer and Xerox, tertiary partners include Harvard University and the University of Southern California, and national non-profit organization partners include the Center for the Study of Social Policy, the Learning Research Development Center, Jobs for the Future (see below), the National Board for Professional Teaching Standards, and the Industrial Areas Foundation.

Jobs for the Future (JFF). JFF is a non-profit organization based in Boston, MA, that "conducts research; provides technical assistance; and proposes policy innovation on the interrelated issues of work, learning, and economic development."[58] JFF has set out to fulfill this mission by assisting 20 states and more than 100 demonstration programs with technical assistance. In 1995, it moved beyond research to become more actively involved in the Benchmark Communities Initiative (BCI), an effort in five local communities to promote school-to-work reform and develop models of best practice for school-to-work system development. This initiative is unique and important because it represents the first attempt to build school-to-work systems through a community-wide approach. JFF's role is as a convenor and technical assistance provider for the five communities, with the ultimate goal of creating a network of communities to share best practices for education reform, youth policy, and community development. Through BCI, JFF has partnered with the communities of Boston, MA, Jefferson County, KY, Milwaukee, WI, North Clackamas, OR, and Philadelphia, PA, to build school-to-work systems. The project's planned outcomes are to affect large-scale restructuring of K-16 educational systems, involve employers in work and learning partnerships, and develop an infrastructure for connecting secondary and tertiary institutions and employers in a coherent system. BCI stresses the integration of separate programs into comprehensive education reform strategies that reach all of a school district's students.

Section Eight: A Closing Observation

We close with a conundrum—a puzzle, really—that the United States will have to solve as it seeks to make more ordered the ways in which its young people transit from initial schooling to working life. One of the real successes of the last decade has been the concerted effort to reform K-12 education in the United States; still, as the just-released results from the *Third International Math and Science Study (TIMSS)* make painfully clear, those reforms have yet to achieve the kind of documented results called for in *A Nation at Risk* over a decade ago. Indeed, the TIMSS comparisons of schooling and student achievement across three dozen nations makes clear that American eighth and twelfth graders fell farther behind comparable students in most of the countries that United States sees as economic competitors.

The second part of the puzzle—one which was raised by a number of analysts when reporting on the meaning of the TIMSS results—relates to the apparent disjunction between economic and educational performance. How could a nation that leads the world in economic growth and new job creation through the purposeful application of science and technology lag so far behind in the creation of a scientifically literate citizenry?

In a special issue of *Policy Perspectives* focusing on science education in America, a broad panel of science educators and university leaders posited an answer to this question. Part of the disconnect between economic success and scientific learning, they argued, reflected the fact that the United States "has long been a net importer of scientific talent from abroad. The United States is a harvester of those school systems producing the students who beat our own students on the TIMSS exams. Part of the answer may lie in the fact that, in the short run, business acumen and a paring back of regulations has had a greater impact on economic growth than did the scientific literacy of young workers. And it may be that things have in fact gotten worse in our schools—a price the nation will have to pay farther down the road."[39]

Have good times and a tight labor market simply masked the problem? Do the dilemmas posed in *America's Choice: High Skills or Low Wages!* still persist: too many young people developing neither the skills nor attitudes to make them truly productive workers; too many firms largely indifferent to the young and the processes by which they achieve skills; too many schools and educators, caught up in their own crusades, proceeding as if the transition from school to work is someone else's problem?

Two additional factors compound the picture. The first is the cost and magnitude of the current effort to reform welfare programs in the United States. It is taxing the capacity of local agencies to respond; it is shifting attention away from schools and the school-to-work transition; and it is diverting many of the programs designed to facilitate transitions in general to the task of helping the disadvantaged transit from welfare to working life in particular.

Second, the United States faces important demographic shifts. Beginning in the mid-1990s, the size of the cohort graduating each year from high school began to increase. Through the first decade of the twenty-first century, the number of young people making the transition from initial education to working life will increase each year. At the same time, the first of the "baby boomers" will begin

leaving the workforce, making the economy and the country increasingly dependent on young workers, whose efforts will have to fund the retirements of so many of their grandparents' generation. In this sense, the looming crisis over Social Security in the United States is as much about economic productivity as it is about the actuarial soundness of the system itself.

We are left, then, with a set of perennial questions. Should the United States, as a matter of public policy, seek to make more ordered—more economically productive, as well as personally satisfying—the transition from initial education to working life? How ought that effort be funded? Organized? Its success measured? To what extent is the problem one of providing real opportunity to the disadvantaged, and to what extent does the challenge at hand really involve most youths and most jobs?

ENDNOTES

[1] Tocqueville (1945, 198)
[2] Tocqueville (1945, 219)
[3] Hoffman (1998)
[4] Gumport et al. (1997)
[5] The Institute for Research on Higher Education (1997)
[6] The Institute for Research on Higher Education (1998); McPherson and Schapiro (1997)
[7] Silverberg et al. (1997)
[8] Zemsky et al. (1997); Institute for Research on Higher Education (1998b)
[9] Marchese (1998)
[10] Wyatt Company (1993)
[11] National Center on the Educational Quality of the Workforce (1994), analysis updated with 1996 data by the Institute for Research on Higher Education
[12] Ibid.
[13] Laurence (1994)
[14] Zemsky and Shaman (1998)
[15] United States General Accounting Office (1990)
[16] Veum and Weiss (1993)
[17] Gardecki and Neumark (Forthcoming)
[18] Topel and Ward (1992)
[19] Neumark (1997)
[20] Urquiola et al. (1997)
[21] Zemsky (1994, 7)
[22] Applebome (1995)
[23] National Center for Postsecondary Improvement (1997)
[24] National Commission on Excellence in Education (1984)
[25] "Section 3. Purposes and Congressional Intent," the School-to-Work Opportunities Act of 1994., H.R. 2884, 103rd Congress of the United States of America
[26] Stern et al. (1994)
[27] Olson (1997)
[28] Ibid.
[29] Ibid.
[30] Ibid.
[31] Ibid.
[32] Bailey et al. (1998)
[33] Olson (1997)
[34] For a complete description of these and other initiatives and networks, see Urquiola et al. (1997)
[35] Urquiola et al. (1997)
[36] Center for Occupational Research and Development (CORD)(N.D.)
[37] Urquiola et al. (1997)
[38] Jobs for the Future (1995)
[39] Knight Higher Education Collaborative (1998, 10)

SECONDARY SOURCES

A wide range of source material and the work of our colleagues contributed to the development of a conceptual framework and provided technical detail for this report. A list of cited references and background information is included below. However, we drew heavily upon three sources in particular when preparing this report, and believe they deserve special mention.

First, important new research by the National Center for Research in Vocational Education (NCRVE) has contributed to a better understanding of the linkages between education and the workplace. A touchstone for our current work is NCRVE's 1997 report "School to Work, College, and Career: A Review of Policy, Practice, and Results, 1993-1997" by Miguel Urquiola, David Stern, Ilana Horn, Carolyn Dornsife, Bernadette Chi, Lea Williams, Donna Merritt, Katharine Hughes, and Thomas Bailey. NCRVE's report provides a comprehensive review of the literature on school-to-work programs since 1993 describing the school-to-work movement's origins and the current debates about the nature of the youth labor market. The report explores the obstacles to successfully integrating school and work, with particular emphasis on the unique concerns within the United States.

Second, though journalistic rather than academic in its approach, Lynn Olson's book *The School-to-Work Revolution* provided a sound compendium of the range and variation in school-to-work programs and intermediaries springing up around the nation. The map she drew is an important resource that provides a sense of the breadth and depth of these local initiatives, as well as how local school and work networks are formed.

Third, Thomas Bailey and Vanessa Smith Morest's work in preparation for the forthcoming, updated edition of *The Forgotten Half* helped us to refine our thinking about the evolution of federal and local workforce development policy.

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Project Area Two: **Transitions from Initial Education to Working Life**
Directors: **Peter Cappelli and Robert Zemsky**

Project Area Two examines the context and paths that young people follow as they move from initial education to working life, often engaging in a combination of working and schooling. The project's method of inquiry is based on the notion that these transitions are governed by access to educational opportunity, on the one hand, and access to productive employment on the other.

Project Area Three: **Postsecondary Markets and Student Outcomes**
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